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# Washington Water Supply Outlook Report February 1, 2008





# Water Supply Outlook Reports and Federal - State – Private Cooperative Snow Surveys

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## *How forecasts are made*

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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# Washington Water Supply Outlook

February 2008

## General Outlook

January seemed to end as powerfully as it started; bringing relentless snow showers that blanked even the lowest elevations of the state. Some of which melted as quickly as it came and some that will be around until summer. 12 of 33 SNOTEL sites, located below 4500 foot elevation, set new record high water content records. Keep in mind that SNOTEL records only extend back to the early 1980's. With big snow comes big danger. To date this season Washington has lost 9 people to avalanche, the most in one season since modern records have been kept (ref. NWAC). Short term forecast shows an ever increasing danger in the backcountry with more snow, wind and rain on the way. Long lead weather forecasts indicate a pretty good chance of continuing this wet pattern with above average precipitation. The biggest question is what is the temperature going to be and how high will the freezing level get? (not very high we hope)

## Snowpack

The February 1 statewide SNOTEL readings were 129% of average (139% of average on February 8). The Similkameen River area snow surveys reported the lowest readings at 78% of average. Readings in the Tolt River Basin in King County reported the highest at 169% of average. Westside averages from SNOTEL, and February 1 snow surveys, included the North Puget Sound river basins with 126% of average, the Central Puget river basins with 151%, and the Lewis-Cowlitz basins with 148% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 116% and the Wenatchee area with 103%. Snowpack in the Spokane River Basin was at 122% and the Walla Walla River Basin had 134% of average. Maximum snow cover in Washington was verified at Paradise SNOTEL near MT. Rainer, with water content of 56.9 inches. Last year at this time Paradise had 49.4 inches of snow water. The highest average in the state was at Mowich SNOTEL with 467% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane .....	142 .....	122
Newman Lake .....	174 .....	140
Pend Oreille .....	125 .....	101
Okanogan .....	73 .....	91
Methow .....	79 .....	100
Conconully Lake .....	82 .....	113
Wenatchee .....	90 .....	102
Chelan .....	81 .....	93
Upper Yakima .....	97 .....	119
Lower Yakima .....	102 .....	114
Ahtanum Creek .....	100 .....	108
Walla Walla .....	146 .....	134
Lower Snake .....	153 .....	115
Cowlitz .....	124 .....	140
Lewis .....	139 .....	157
White .....	109 .....	127
Green .....	120 .....	147
Puyallup .....	122 .....	139
Cedar .....	115 .....	168
Snoqualmie .....	113 .....	137
Skykomish .....	111 .....	131
Skagit .....	84 .....	110
Baker .....	85 .....	126
Nooksack .....	89 .....	143
Olympic Peninsula .....	86 .....	142



## Precipitation

During the month of January, the National Weather Service and Natural Resources Conservation Service climate stations reported near average precipitation totals throughout Washington river basins. The highest percent of average in the state was at Quartz Peak SNOTEL which reported 188% of average for a total of 11.1 inches. The average for this site is 5.89 inches for January. The wettest spot in the state was reported at June Lake SNOTEL with a January accumulation of 26.5 inches.

RIVER BASIN	JANUARY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane .....	126 .....	115
Colville-Pend Oreille .....	120 .....	110
Okanogan-Methow .....	112 .....	113
Wenatchee-Chelan .....	94 .....	101
Upper Yakima .....	101 .....	100
Lower Yakima .....	112 .....	112
Walla Walla .....	110 .....	111
Lower Snake .....	129 .....	118
Cowlitz-Lewis .....	104 .....	108
White-Green-Puyallup .....	102 .....	99
Central Puget Sound .....	100 .....	105
North Puget Sound .....	85 .....	99
Olympic Peninsula .....	120 .....	100

## Reservoir

Seasonal reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation, municipal demands and flood control. Reservoir storage in the Yakima Basin was 333,000-acre feet, 75% of average for the Upper Reaches and 118,000-acre feet or 97% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 90% of average for February 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 38,000 acre feet, 33% of average and 16% of capacity; Chelan Lake, 247,000-acre feet, 78% of average and 36% of capacity; and the Skagit River reservoirs at 95% of average and 68% of capacity.

BASIN	PERCENT OF CAPACITY	CURRENT STORAGE AS PERCENT OF AVERAGE
Spokane .....	16 .....	33
Colville-Pend Oreille .....	57 .....	119
Okanogan-Methow .....	64 .....	90
Wenatchee-Chelan .....	36 .....	78
Upper Yakima .....	40 .....	75
Lower Yakima .....	51 .....	97
Lower Snake .....	65 .....	104
Cowlitz-Lewis .....	N/A .....	N/A
North Puget Sound .....	68 .....	95

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## Streamflow

Forecasts vary from 129% of average for the Rex River near Cedar Falls to 83% of average for Okanogan River and Chamokane Creek forecast points. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 127%; White River, 119%; and Skagit River, 106%. Some Eastern Washington streams include the Yakima River near Parker, 105%; Wenatchee River at Plain, 109%; and Spokane River near Post Falls, 102%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. Caution should be used when using early season forecasts for critical water resource management decisions.

Statewide January streamflows were mostly below average due to seasonally cool temperatures, low elevation snow fall and a lack of snow melt. The Methow River near Pateros had the highest reported flows with 91% of average. The Yakima River at Cle Elum with 35% of average was the lowest in the state. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Cowlitz at Castle Rock, 85%; the Spokane at Spokane, 44%; the Columbia below Rock Island Dam, 67%; and the Cle Elum near Roslyn, 39%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
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Spokane .....	83-102
Colville-Pend Oreille .....	93-103
Okanogan-Methow .....	83-95
Wenatchee-Chelan .....	96-109
Upper Yakima .....	110-120
Lower Yakima .....	102-119
Walla Walla .....	112-114
Lower Snake .....	103-113
Cowlitz-Lewis .....	99-119
White-Green-Puyallup .....	90-98
Central Puget Sound .....	111-129
North Puget Sound .....	106-110
Olympic Peninsula .....	113-115

STREAM	PERCENT OF AVERAGE JANUARY STREAMFLOWS
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Pend Oreille Below Box Canyon .....	67
Kettle at Laurier .....	70
Columbia at Birchbank .....	86
Spokane at Long Lake .....	45
Similkameen at Nighthawk .....	82
Okanogan at Tonasket .....	84
Methow at Pateros .....	91
Chelan at Chelan .....	70
Wenatchee at Pashastin .....	51
Yakima at Cle Elum .....	35
Yakima at Parker .....	39
Naches at Naches .....	47
Grande Ronde at Troy .....	46
Snake below Lower Granite Dam .....	53
SF Walla Walla near Milton Freewater .....	64
Columbia River at The Dalles .....	64
Lewis at Ariel .....	61
Cowlitz below Mayfield Dam .....	69
Skagit at Concrete .....	64
Dungeness near Sequim .....	58

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# BASIN SUMMARY OF SNOW COURSE DATA

FEBRUARY 2008

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ABERDEEN LAKE CAN.	4000	1/29/08	14	2.8	4.9	4.7	LONE PINE SNOTEL	3800	2/01/08	143	42.0	29.3	24.1
AHTANUM R.S.	3100	1/30/08	25	5.6	5.3	7.1	LOOKOUT SNOTEL	5140	2/01/08	102	24.1	19.2	21.5
ALPINE MEADOWS SNTL	3500	2/01/08	---	46.3	38.6	29.2	LOST HORSE MTN CAN.	6300	1/27/08	20	3.0	8.6	6.5
ASHLEY DIVIDE	4820	2/05/08	27	6.2	3.6	5.1	LOST HORSE SNOTEL	5000	2/01/08	57	13.9	14.0	13.1
BADGER PASS SNOTEL	6900	2/01/08	93	23.1	21.0	22.3	LOST LAKE SNOTEL	6110	2/01/08	---	37.5	31.9	40.6
BAIRD #2	3220	1/31/08	36	7.9	5.7	--	LOUP LOUP CAMPGROUND		1/28/08	27	6.9	9.7	--
BARKER LAKES SNOTEL	8250	2/01/08	37	8.0	8.6	9.2	LUBRECHT FOREST NO 3	5450	1/31/08	16	2.9	2.9	4.6
BARNES CREEK CAN.	5320	2/06/08	49	13.0	12.4	14.4	LUBRECHT FOREST NO 4	4650	1/31/08	10	1.7	1.4	2.5
BASIN CREEK SNOTEL	7180	2/01/08	25	3.7	4.6	4.9	LUBRECHT FOREST NO 6	4040	1/29/08	12	2.4	1.4	2.8
BEAVER CREEK TRAIL	2200	2/02/08	91	21.3	17.0	10.3	LUBRECHT HYDROPLT	4200	1/31/08	22	3.3	3.2	4.2
BEAVER PASS	3680	2/02/08	90	27.4	31.9	19.3	LUBRECHT SNOTEL	4680	2/01/08	19	3.9	3.9	4.2
BEAVER PASS SNOTEL	3630	2/01/08	---	30.2	38.9	26.2	LYMAN LAKE SNOTEL	5900	2/01/08	137	35.1	47.6	43.4
BIG WHITE MTN CAN.	5510	1/30/08	39	9.7	12.9	13.3	LYNN LAKE	4000	2/04/08	100	31.5	17.5	14.5
BLACK PINE SNOTEL	7100	2/01/08	36	8.0	5.5	8.0	MARIAS PASS	5250	1/30/08	53	12.0	11.1	11.7
BLACKWALL PILL CAN.	6370	2/01/08	---	22.2	30.6	23.8	MARTEN LAKE AM	3600	2/01/08	---	66.9E	66.4	46.8
BLEWETT PASS#2 SNOTEL	4270	2/01/08	50	15.7	18.5	12.4	MARTEN RIDGE SNOTEL	3520	2/01/08	138	48.4	63.1	--
BRENDA MINE CAN.	4450	2/01/08	---	9.7	13.3	8.9	MAZAMA		1/28/08	37	10.0	11.1	--
BROWN TOP AM	6000	2/02/08	139	43.6	55.8	42.5	MCCULLOCH CAN.	4200	1/31/08	16	3.5	5.0	4.9
BROWNS PASS		1/25/08	17	3.5	5.2	--	MEADOWS CABIN	1900	2/03/08	43	8.5	5.5	5.0
BUMPING LAKE (NEW)	3400	1/31/08	76	13.8	17.9	13.3	MEADOWS PASS SNOTEL	3240	2/01/08	121	33.4	28.0	19.1
BUMPING RIDGE SNOTEL	4600	2/01/08	104	23.9	23.9	19.4	METEOR		1/29/08	30	7.3	4.9	--
BUNCHGRASS MDWS SNOTEL	5000	2/01/08	---	19.6	16.1	18.6	MICA CREEK SNOTEL	4510	2/01/08	88	22.2	17.3	18.3
BURNT MOUNTAIN PIL	4200	2/01/08	73	16.0	13.9	9.0	MINERS RIDGE SNOTEL	6200	2/01/08	127	33.9	42.0	36.2
BUTTERMILK BUTTE	5250	1/29/08	38	10.0	15.1	--	MISSEZULA MTN CAN.	5080	1/27/08	22	4.7	8.3	6.5
CAYUSE PASS SNOTEL	5240	2/01/08	163	45.4	45.5	--	MISSION CREEK CAN.	5840	2/01/08	---	9.8	25.5	13.6
CHESSMAN RESERVOIR	6200	1/30/08	10	1.6	2.3	2.5	MONASHEE PASS CAN.	4500	2/06/08	31	7.6	8.9	9.6
CHEWALAH #2	4930	2/01/08	65	19.0	12.2	--	MORRISSEY RIDGE CAN.	6100	2/01/08	---	18.2	--	18.6
CHICKEN CREEK	4060	1/30/08	66	16.4	10.8	11.5	MORSE LAKE SNOTEL	5400	2/01/08	---	47.8	40.3	36.9
COLD CREEK STRIP	6020	1/30/08	29	6.3	7.7	--	MOSES MOUNTAIN (2)	4800	1/31/08	38	11.6	10.1	12.0
COLOCKUM PASS	5370	1/30/08	46	12.3	13.3	11.7	MOSES MTN SNOTEL	4800	2/01/08	34	9.0	11.2	10.4
COMBINATION SNOTEL	5600	2/01/08	23	3.8	2.7	3.4	MOSES PEAK	6650	1/31/08	52	17.9	16.5	9.6
COPPER BOTTOM SNOTEL	5200	2/01/08	33	5.7	5.2	8.0	MOSQUITO RDG SNOTEL	5200	2/01/08	---	28.3	23.2	24.6
COPPER MOUNTAIN	7700	1/27/08	28	6.3	6.3	7.0	MOULTON RESERVOIR	6850	1/30/08	23	4.1	3.3	5.2
CORRAL PASS SNOTEL	6000	2/01/08	85	22.7	24.2	22.1	MOUNT BLUM AM	5800	2/01/08	---	36.5E	45.6	37.6
COUGAR MTN. SNOTEL	3200	2/01/08	87	24.0	14.6	13.7	MOUNT CRAG SNOTEL	4050	2/01/08	96	27.4	26.8	19.3
COX VALLEY	4500	1/29/08	101	29.0	40.1	24.2	MT. KOBAY CAN.	5500	1/27/08	26	6.2	10.4	7.9
COYOTE HILL	4200	1/30/08	28	7.2	4.5	7.3	MOUNT TOLMAN	2000	1/28/08	22	4.5	2.1	3.6
DALY CREEK SNOTEL	5780	2/01/08	38	8.4	6.2	7.4	MOWICH SNOTEL	3150	2/01/08	26	5.6	.0	1.2
DEER PARK	5200	1/30/08	50	16.0	24.4	12.2	MOUNT GARDNER SNOTEL	2860	2/01/08	97	24.3	17.9	12.0
DEVILS PARK	5900	2/02/08	101	32.3	39.2	30.7	MUTTON CREEK #1	5700	1/25/08	39	10.6	14.8	9.4
DISAUTEL PASS		1/31/08	24	5.8	5.6	--	N.P. ELK CR SNOTEL	6250	2/01/08	30	6.2	6.7	8.0
DISCOVERY BASIN	7050	1/30/08	26	5.3	5.8	6.6	NEVADA RIDGE SNOTEL	7020	2/01/08	46	9.9	7.4	10.1
DIX HILL	6400	1/27/08	28	7.0	6.0	7.6	NEW HOZOMEEN LAKE	2800	1/30/08	37	9.0	--	7.8
DOCK BUTTE AM	3800	2/01/08	---	51.7E	57.4	37.2	NEZ PERCE CMP SNOTEL	5650	2/01/08	42	10.0	7.4	9.9
DOMMERIE PLATS	2200	1/31/08	53	12.5	7.3	6.4	NOISY BASIN SNOTEL	6040	2/01/08	93	24.2	20.4	27.0
DUNCAN RIDGE	5370	1/30/08	26	5.4	6.0	--	OLALLIE MDWS SNOTEL	3960	2/01/08	147	45.3	45.7	39.2
DUNGENESS SNOTEL	4100	2/01/08	41	11.4	11.2	5.9	OPHIR PARK	7150	1/27/08	29	7.5	6.5	10.6
EASY PASS AM	5200	2/01/08	---	46.2E	60.0	46.2	PARADISE PARK SNOTEL	5500	2/01/08	164	56.9	49.4	48.1
ELBOW LAKE SNOTEL	3200	2/01/08	115	36.1	36.5	20.4	PARK CK RIDGE SNOTEL	4600	2/01/08	---	38.1	44.9	35.0
EMERY CREEK SNOTEL	4350	2/01/08	56	11.3	9.0	10.5	PETERSON MDW SNOTEL	7200	2/01/08	24	4.8	5.4	6.1
ENDERBY CAN.	5800	1/28/08	88	27.8	30.7	27.2	PIGHTAIL PEAK SNOTEL	5900	2/01/08	135	38.3	38.0	34.3
FARRON CAN.	4000	1/31/08	32	7.2	--	8.7	PIKE CREEK SNOTEL	5930	2/01/08	76	17.6	15.7	17.8
FISH CREEK	8000	1/30/08	24	4.5	5.8	5.8	PIPESTONE PASS	7200	1/26/08	11	3.0	1.9	3.2
FISH LAKE	3370	1/30/08	107	28.2	28.8	24.5	POPE RIDGE SNOTEL	3540	2/01/08	70	16.1	17.0	14.9
FISH LAKE SNOTEL	3370	2/01/08	106	26.6	26.6	24.7	POSTILL LAKE CAN.	4200	1/30/08	15	3.7	6.6	5.8
FLATTOP MTN SNOTEL	6300	2/01/08	135	32.4	28.0	31.8	POTATO HILL SNOTEL	4500	2/01/08	114	28.4	23.3	18.5
FOURTH OF JULY SUM	3200	1/29/08	62	14.0	8.1	7.1	QUARTZ PEAK SNOTEL	4700	2/01/08	84	21.5	15.2	15.4
FREZZOUT CK. TRAIL	3500	1/30/08	40	10.8	13.0	8.8	RAGGED MTN SNOTEL	4210	2/01/08	---	24.1	17.4	--
FROHNER MDWS SNOTEL	6480	2/01/08	24	4.5	4.3	5.0	RAGGED RIDGE	3330	1/28/08	56	13.2	6.1	--
FROST MEADOWS	4630	1/31/08	58	14.2	17.9	--	RAINY PASS SNOTEL	4780	2/01/08	98	24.8	31.4	30.2
GOAT CREEK	3600	1/30/08	26	6.1	5.4	5.1	RAINY PASS	4780	2/02/08	100	28.8	32.3	27.6
GOLD MTN LOOKOUT		1/30/08	39	10.6	8.3	--	REX RIVER SNOTEL	1900	2/01/08	128	39.7	36.5	21.7
GRASS MOUNTAIN #2	2900	2/04/08	68	20.5	11.7	7.5	ROCKER PEAK SNOTEL	8000	2/01/08	37	6.8	7.4	9.1
GRAVE CRK SNOTEL	4300	2/01/08	52	12.2	10.5	11.7	ROCKY CREEK AM	2100	2/01/08	---	41.8E	34.8	20.2
GREEN LAKE SNOTEL	6000	2/01/08	75	18.9	19.2	15.4	RUSTY CREEK	4000	1/25/08	24	6.3	6.2	4.9
GROUSE CAMP SNOTEL	5380	2/01/08	62	14.2	14.6	14.0	SF THUNDER CK AM	2200	2/01/08	---	15.7E	9.6	5.9
HAMILTON HILL CAN.	4550	1/27/08	28	6.5	12.1	9.9	SADDLE MTN SNOTEL	7900	2/01/08	78	18.5	12.5	17.3
HAND CREEK SNOTEL	5030	2/01/08	40	8.9	7.2	8.6	SALMON MDWS SNOTEL	4500	2/01/08	31	7.8	9.0	7.5
HARTS PASS SNOTEL	6500	2/01/08	99	28.4	38.2	31.3	SASSE RIDGE SNOTEL	4200	2/01/08	99	27.3	32.0	23.8
HARTS PASS	6500	1/31/08	105	33.6	40.0	29.5	SATUS PASS	4030	2/02/08	77	21.2	10.6	8.7
HELL ROARING DIVIDE	5770	2/01/08	93	25.4	16.7	20.7	SAVAGE PASS SNOTEL	6170	2/01/08	99	21.3	15.1	17.6
HERRIG JUNCTION	4850	1/30/08	80	20.3	17.0	18.1	SAWMILL RIDGE	4700	2/04/08	85	25.2	23.3	22.9
HIGH RIDGE SNOTEL	4920	2/01/08	98	25.7	16.8	16.9	SAWMILL RIDGE SNOTEL	4630	2/01/08	109	33.6	41.8	--
HOLBROOK	4530	2/01/08	---	7.2E	4.5	7.2	SCHREIBERS MDW AM	3400	2/01/08	---	37.9E	52.0	32.4
HOODOO BASIN SNOTEL	6050	2/01/08	133	32.7	24.6	30.1	SENTINEL BT SNOTEL	4920	2/01/08	26	5.2	6.9	--
HUCKLEBERRY SNOTEL	2000	2/01/08	38	7.0	2.8	2.0	SHEEP CANYON SNOTEL	4050	2/01/08	143	47.8	26.3	23.9
HUMBOLDT GLCH SNOTEL	4250	2/01/08	---	15.2	8.5	9.5	SHERWIN SNOTEL	3200	2/01/08	---	13.6	9.1	8.4
INTERGAARD	6450	1/26/08	16	3.0	2.3	4.8	SILVER STAR MTN CAN.	5600	2/01/08	68	18.0	21.0	20.0
IRENE'S CAMP	5530	1/30/08	33	7.0	8.7	--	SKALKAH SNOTEL	7260	2/01/08	65	16.7	12.7	16.0
ISINTOK LAKE CAN.	5100	2/01/08	18	3.1	4.8	5.2	SKOOKUM CREEK SNOTEL	3920	2/01/08	106	37.2	26.4	20.2
JASPER PASS AM	5400	2/01/08	---	36.5E	72.0	56.5	SKOOKUM LAKES	4230	2/01/08	61	16.9	8.0	--
JUNE LAKE SNOTEL	3200	2/01/08	---	53.2	30.6	28.4	SOURDOUGH GUL SNOTEL	4000	2/01/08	41	10.5	1.5	--
KELLER RIDGE	3700	1/29/08	25	5.3	4.7	--	SOUTH BALDY	4920	2/01/08	72	21.0	--	--
KELLOGG PEAK	5560	2/04/08	110	33.6	21.4	20.7	SPENCER MDW SNOTEL	3400	2/01/08	135	41.2	27.8	21.9
KRAFT CREEK SNOTEL	4750	2/01/08	34	8.5	6.3	10.9	SPIRIT LAKE SNOTEL	3100	2/01/08	41	16.3	4.0	5.1
LAMB BUTTE		1/31/08	50	13.5	17.1	--	SPOTTED BEAR MTN.	7000	2/01/08	---	9.9E	8.0	10.1
LESTER CREEK	3100	2/04/08	80	22.8	15.6	14.2	SPRUCE SPGS SNOTEL	5700	2/01/08	74	18.1	9.9	--
LOLO PASS SNOTEL	5240	2/01/08	102	23.2	17.0	20.9	STARVATION MOUNTAIN	6750	1/28/08	42	12.4	17.3	13.0

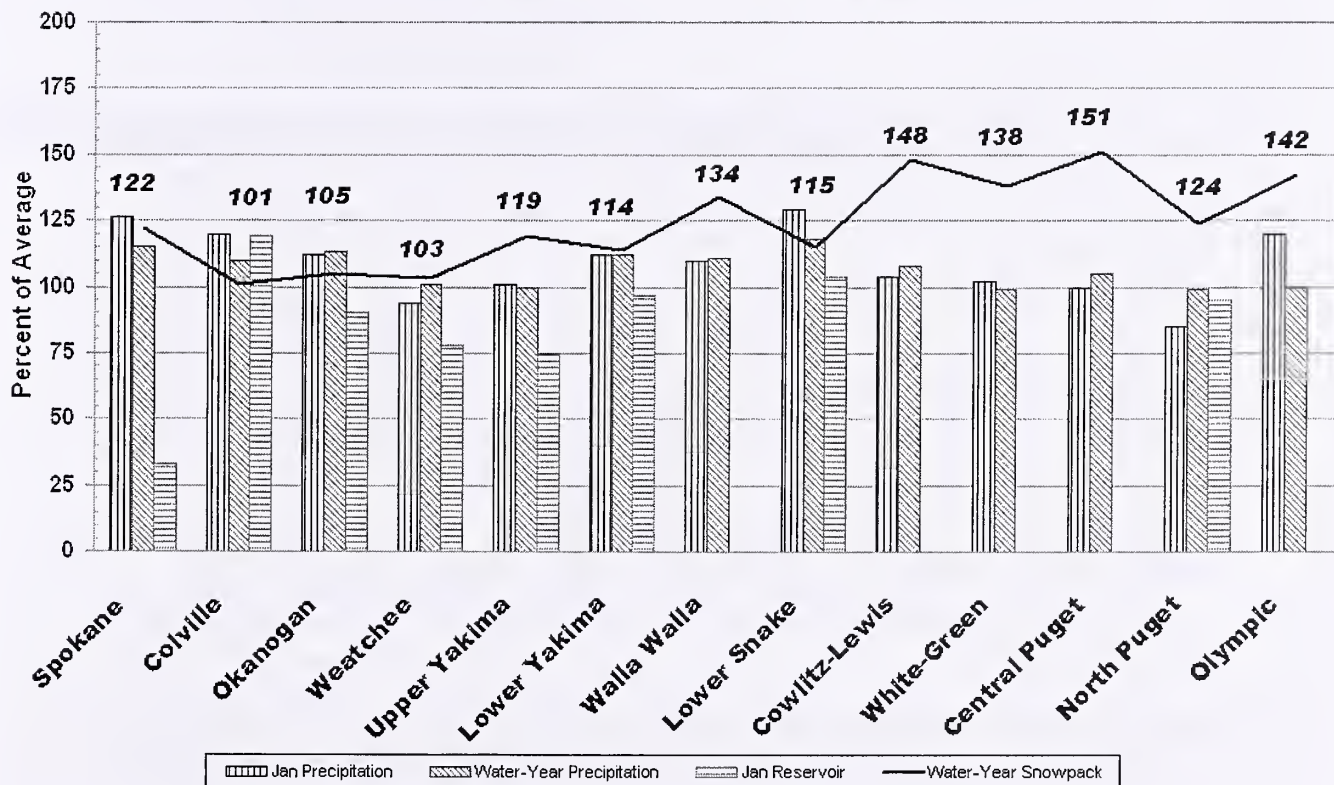


SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
STAHL PEAK SNOTEL	6030	2/01/08	98	27.1	21.9	24.1
STAMPEDE PASS SNOTEL	3860	2/01/08	126	35.1	34.4	31.0
STEVENS PASS SNOTEL	4070	2/01/08	127	31.3	31.3	30.2
STORM LAKE	7780	1/30/08	33	7.3	7.3	8.3
STRYKER BASIN	6180	1/30/08	89	24.7	19.2	21.3
SUMMERLAND RES CAN.	4200	1/29/08	27	5.7	9.9	6.9
SUMMIT G.S. #2	4600	1/30/08	29	6.6	7.3	6.3
SUNSET SNOTEL	5540	2/01/08	---	14.6	11.2	20.9
SURPRISE LKS SNOTEL	4250	2/01/08	145	41.1	34.9	32.2
SWAMP CREEK SNOTEL	4000	2/01/08	54	14.1	17.0	13.9
TEN MILE LOWER	6600	1/30/08	21	3.6	3.8	4.7
TEN MILE MIDDLE	6800	1/30/08	25	4.9	4.9	7.1
THUNDER BASIN SNOTEL	4200	2/01/08	89	25.4	30.4	24.3
THOMPSON CREEK	2500	1/28/08	39	8.4	3.4	--
THOMPSON RIDGE	4650	1/29/08	36	9.1	12.5	--
TINKHAM CREEK SNOTEL	3000	2/01/08	115	29.5	27.9	22.7
TOATS COULEE	2850	1/30/08	16	2.8	3.9	2.6
TOUCHET SNOTEL	5530	2/01/08	98	28.7	20.5	23.8
TRINKUS LAKE	6100	2/01/08	---	25.3E	23.0	26.6
TROUGH #2 SNOTEL	5310	2/01/08	29	8.0	8.2	7.5

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
TROUT CREEK CAN.	5650	2/02/08	23	4.3	7.1	5.5
TRUMAN CREEK	4060	1/29/08	23	5.0	3.6	3.5
TUNNEL AVENUE	2450	2/05/08	92	24.6	20.0	14.8
TV MOUNTAIN	6800	2/02/08	47	13.0	9.3	11.8
TWELVEMILE SNOTEL	5600	2/01/08	63	15.4	9.6	12.8
TWIN CAMP	4100	2/04/08	64	18.7	16.8	17.4
TWIN LAKES SNOTEL	6400	2/01/08	116	30.6	24.1	27.5
TWIN SPIRIT DIVIDE	3480	2/03/08	76	16.8	8.3	10.5
UPPER HOLLAND LAKE	6200	2/02/08	75	21.1	16.7	23.7
UPPER WHEELER SNOTEL	4400	2/01/08	44	9.8	10.4	9.2
VULCAN MTN	4660	1/30/08	28	8.2	9.3	--
VULCAN ROAD	3840	1/30/08	22	5.1	6.4	--
WARM SPRINGS SNOTEL	7800	2/01/08	50	12.6	12.0	13.8
WATSON LAKES AM	4500	2/01/08	---	45.9E	52.5	35.6
WATERHOLE SNOTEL	5000	2/01/08	117	36.7	38.2	23.2
WEASEL DIVIDE	5450	1/31/08	87	23.1	21.5	21.5
WELLS CREEK SNOTEL	4200	2/01/08	90	24.7	32.1	22.0
WHITE PASS ES SNOTEL	4500	2/01/08	80	18.3	16.5	17.1
WHITE ROCKS MTN CAN.	7200	1/26/08	48	14.6	17.7	15.7

NRCS Natural Resources  
Conservation Service

### February 1, 2008 - Snowpack, Precipitation and Reservoir Conditions at a Glance (Water Year = October 1, 2007 - Current Date)





Natural Resources Conservation Service

Washington State  
Snow, Water and Climate Services

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### Helpful Internet Addresses

#### NRCS Snow Survey and Climate Services Homepages

Washington:

<http://www.wa.nrcs.usda.gov/snow>

Oregon:

<http://www.or.nrcs.usda.gov/snow>

Idaho:

<http://www.id.nrcs.usda.gov/snow>

National Water and Climate Center (NWCC):

<http://www.wcc.nrcs.usda.gov>

NWCC Anonymous FTP Server:

<ftp.wcc.nrcs.usda.gov>

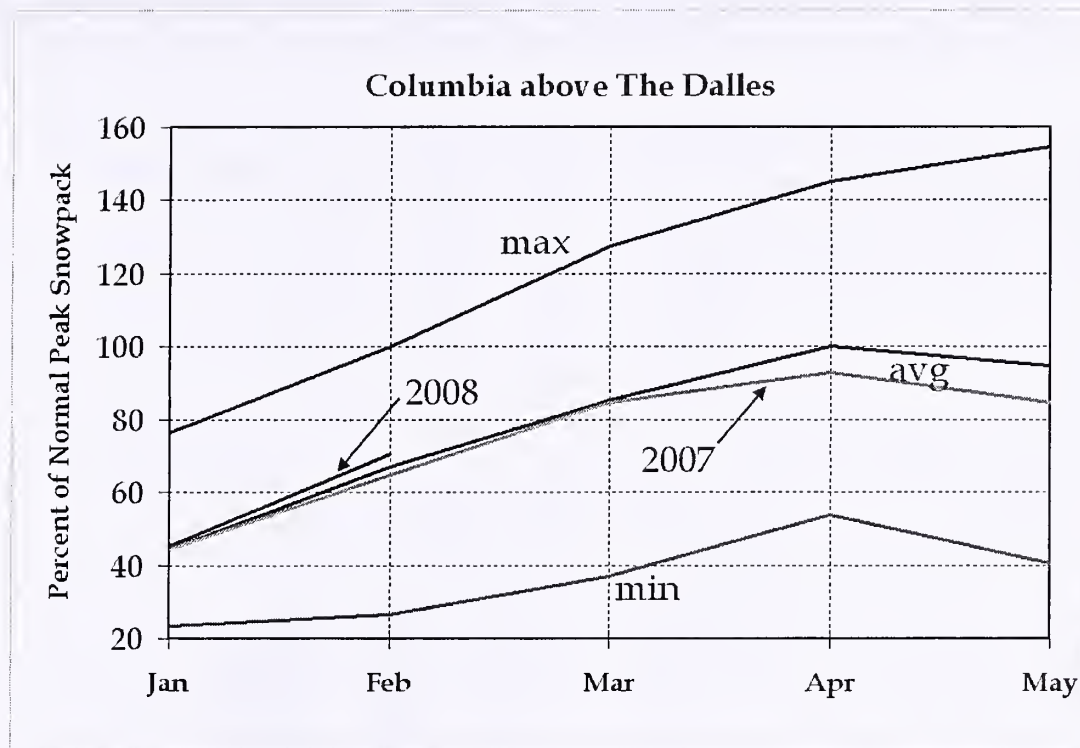
#### USDA-NRCS Agency Homepages

Washington:

<http://www.wa.nrcs.usda.gov>

NRCS National:

<http://www.nrcs.usda.gov>



February 1, 2008

The Columbia Basin snowpack charts are produced, using only automated data. These data are telemetered via remote collection sites in Canada and the United States. The data are provisional, until they are officially released by the responsible data collection agency.

The combined Columbia Basin snowpack above The Dalles is currently at 105 percent of average, compared to 97 percent of average last year and 102 percent last month. The Canadian snow pack dropped from 114 percent on January 1 to 103 percent on February 1. However, most of Idaho, Oregon, western Montana and southern Washington experienced above average precipitation throughout the month of January, coupled with cold temperatures. This combination of climate variables increased the snow pack significantly in most U.S. basins. For example, the Spokane basin snow pack increased from 95 percent last month to 111 percent on February 1. Similarly, the Yakima snow pack increased from 102 percent to 112 percent; the Snake headwaters from 85 percent to 100 percent; the Boise and southern Idaho basins from 87 percent to 113 percent; the eastern Oregon/Snake from 105 percent to 121 percent; the Salmon from 104 percent to 116 percent; the Clearwater from 104 percent to 110 percent; the John Day from 109 percent to 127 percent; and western Oregon got hammered, with the Deschutes increasing from 105 percent to 145 percent. The overall snowpack is at 71 percent of the average peak accumulation. This compares to 65 percent last year.

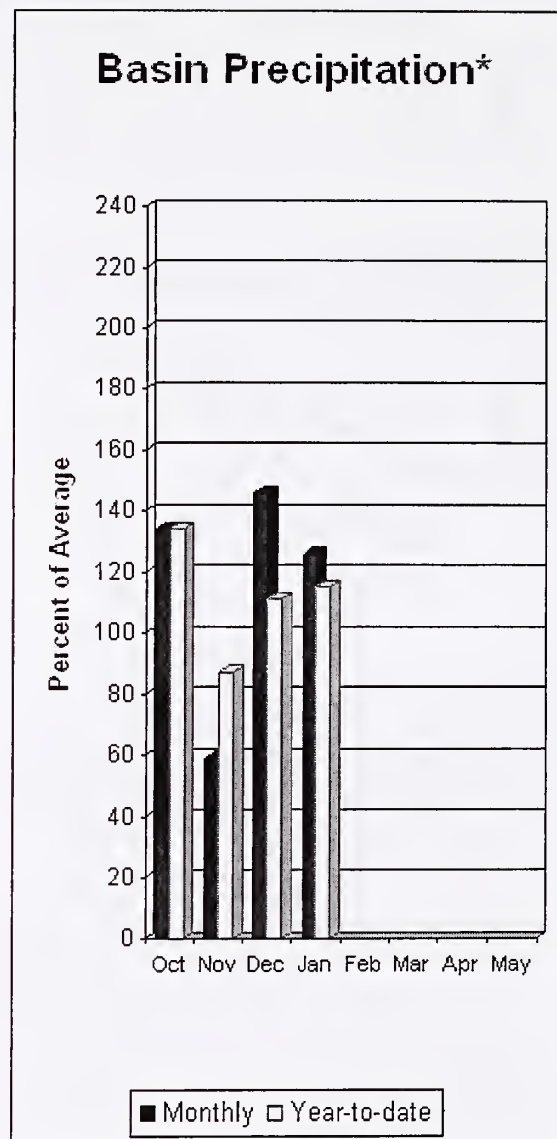
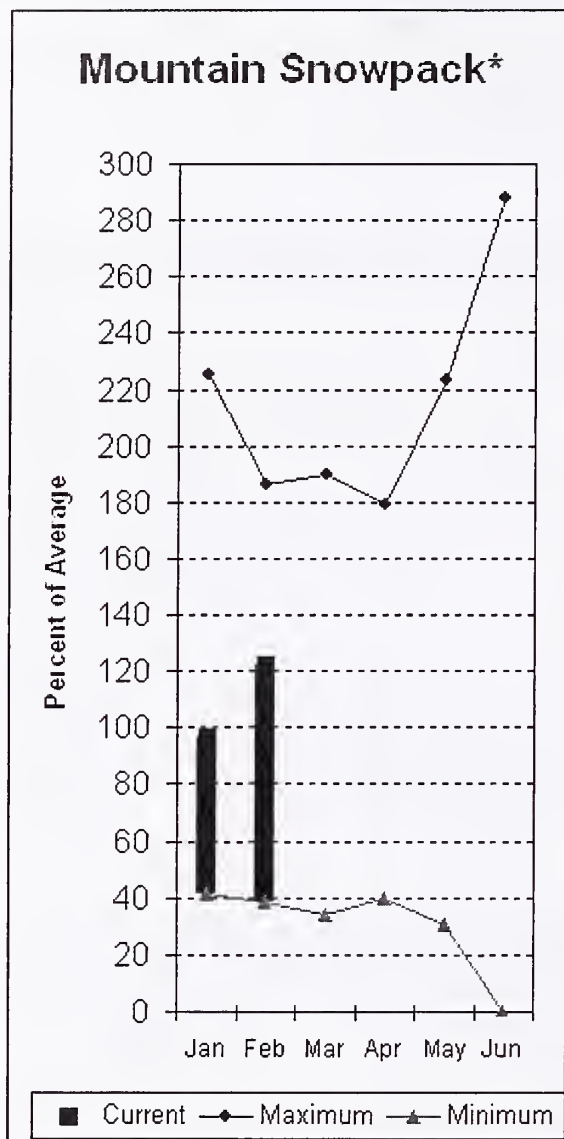
The snowpack in the Columbia Basin above Castlegar is at 102 percent of average. This compares to 111 percent last year and 108 percent last month. For the basin above Grand Coulee, the snowpack is at 102 percent of average, compared to 103 percent last year and 103 percent last month. The Snake River snowpack above Ice Harbor is at 112 percent of average, compared to 76 percent last year and 99 percent last month.

So...even though the snow pack conditions in British Columbia deteriorated over the last month, the rest of the Columbia in the U.S. more than made up for it. The snowpack in the Kettle is the lowest in the basin at 83 percent, while the highest is in the Deschutes Basin of central Oregon.

Overall, the 2008 water supply potential within the Columbia Basin looks very good.



# Spokane River Basin



\*Based on selected stations

The February 1 forecasts for summer runoff within the Spokane River Basin are 102% of average near Post Falls and 101% at Long Lake. The Chamokane River near Long Lake forecasted to have 83% of average flows for the May-August period. The forecast is based on a basin snowpack that is 122% of average and precipitation that is 115% of average for the water year. Precipitation for January was above normal at 126% of average. Streamflow on the Spokane River at Long Lake was 45% of average for January. February 1 storage in Coeur d'Alene Lake was 38,000 acre feet, 33% of average and 16% of capacity. Snowpack at Quartz Peak SNOTEL site was 140% of average with 21.5 inches of water content. Average temperatures in the Spokane basin were 4 degrees below normal for January and 1 degree below normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

# Spokane River Basin

## Streamflow Forecasts - February 1, 2008

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SPOKANE near Post Falls (2)	APR-JUL	2020	2360	2590	102	2820	3160	2550
	APR-SEP	2130	2470	2700	102	2930	3270	2650
SPOKANE at Long Lake (2)	APR-JUL	2210	2610	2880	101	3150	3550	2850
	APR-SEP	2410	2830	3110	101	3390	3810	3070
CHAMOKANE CREEK near Long Lake	MAY-AUG	2.7	6.2	8.5	83	10.8	14.3	10.2

### SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

### SPOKANE RIVER BASIN Watershed Snowpack Analysis - February 1, 2008

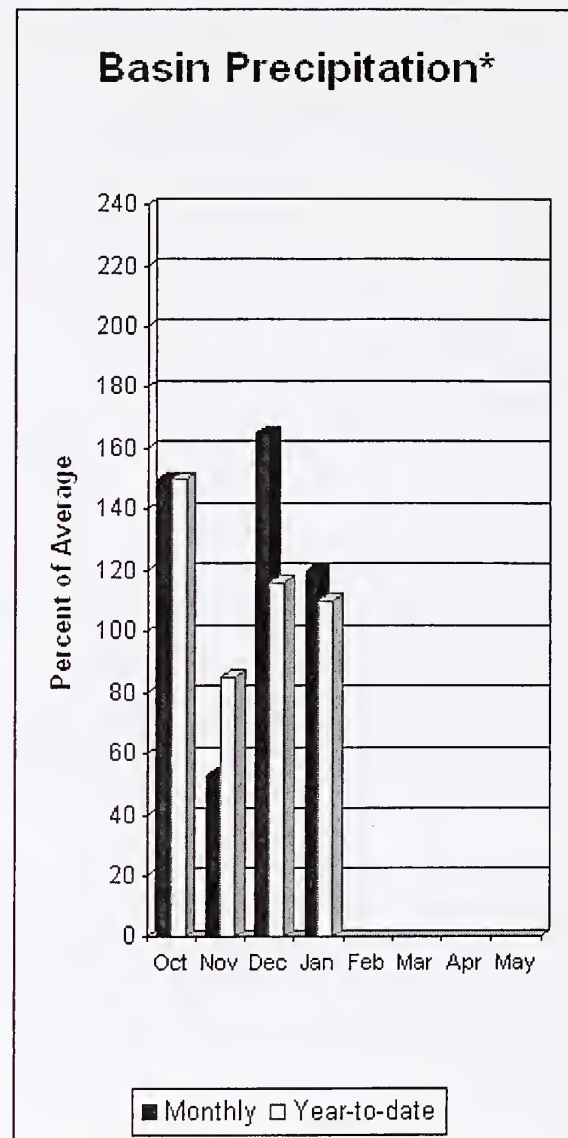
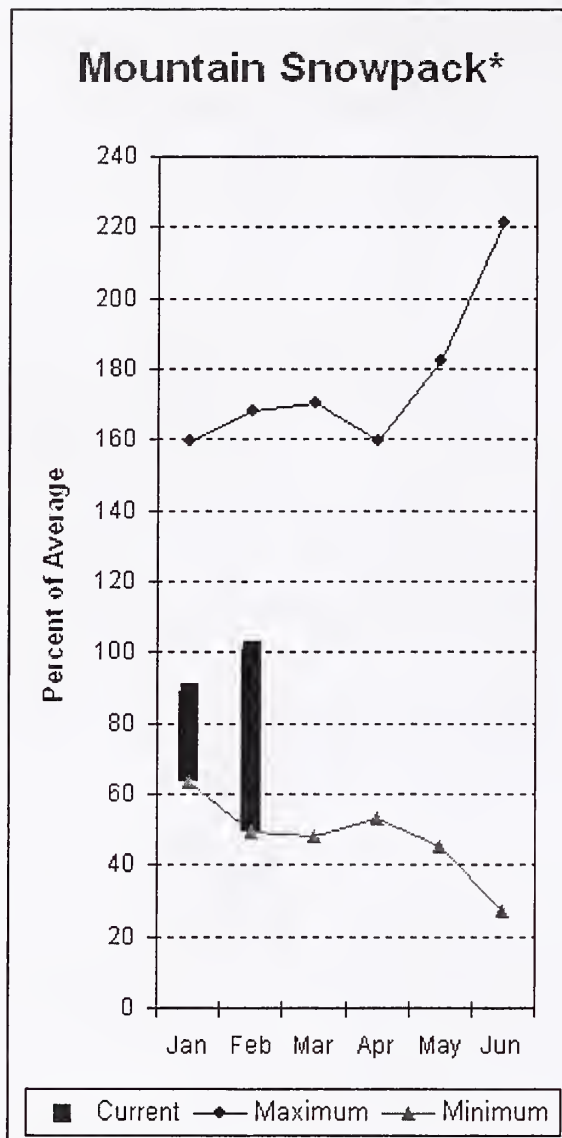
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
SPOKANE RIVER	11	142	122
NEWMAN LAKE	1	174	140

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.

## Colville - Pend Oreille River Basins



\*Based on selected stations

The April – September average forecast for the Kettle River streamflow is 94%, Colville at Kettle Falls is 100% and Priest River near the town of Priest River is 102%. January streamflow was 67% of average on the Pend Oreille River, 86% on the Columbia at Birchbank and 74% on the Kettle River. February 1 snow cover was 101% of average in the Pend Oreille Basin River Basin and 88 % in the Kettle River Basin. Bunchgrass Meadows SNOTEL site had 19.6 inches of snow water on the snow pillow. Normally Bunchgrass would have 18.6 inches on February 1. Precipitation during January was 120% of average, bringing the year-to-date precipitation to 110% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 119% of normal. Average temperatures were 4 degrees below normal for January and 1 degree below normal for the water year.

For more information contact your local Natural Resources Conservation Service office.



# Colville - Pend Oreille River Basins

## Streamflow Forecasts - February 1, 2008

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
PEND OREILLE Lake Inflow (2)	APR-JUL	11300	11600	11800	93	12000	12300	12700
	APR-SEP	12300	12700	12900	93	13100	13500	13900
PRIEST near Priest River (1,2)	APR-JUL	580	755	835	103	915	1090	815
	APR-SEP	615	805	890	102	975	1160	870
PEND OREILLE bl Box Canyon (2)	APR-JUL	9420	11000	12100	94	13200	14800	12900
	APR-SEP	9970	11900	13200	94	14500	16400	14100
COLVILLE at Kettle Falls	APR-JUL	74	106	128	100	150	182	128
	APR-SEP	81	117	141	100	165	200	141
KETTLE near Laurier	APR-JUL	1250	1550	1750	94	1950	2250	1870
	APR-SEP	1260	1610	1850	94	2090	2440	1970
COLUMBIA at Birchbank (1,2)	APR-JUL	31500	33800	34800	98	35800	38100	35700
	APR-SEP	37700	42600	44900	103	47200	52100	43500
COLUMBIA at Grand Coulee Dm (1,2)	APR-JUL	42500	49700	53000	99	56300	63500	53800
	APR-SEP	50500	59100	63000	98	66900	75500	64000

### COLVILLE - PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

### COLVILLE - PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - February 1, 2008

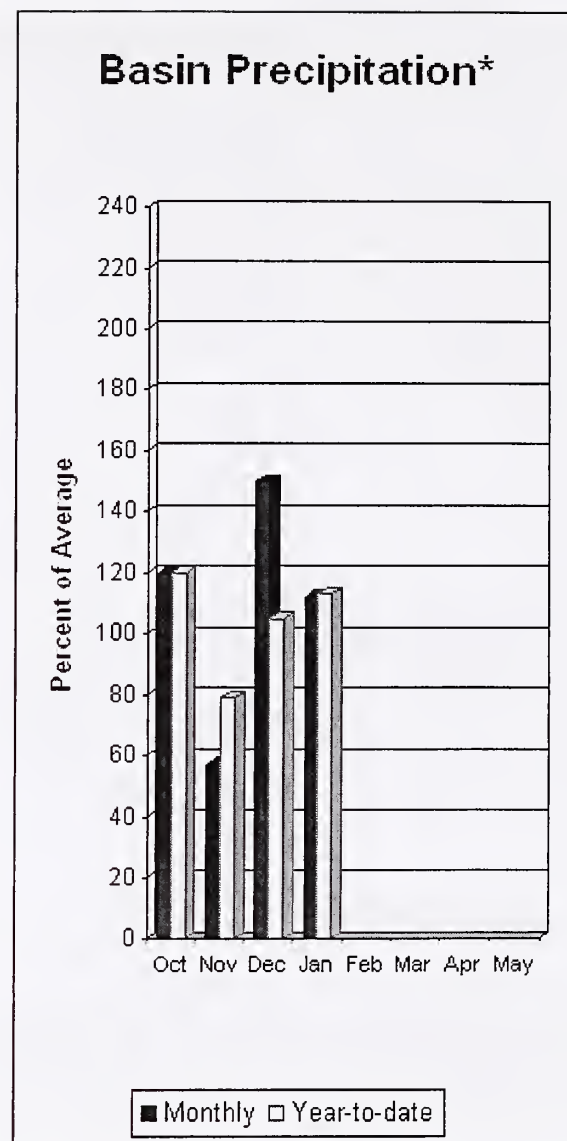
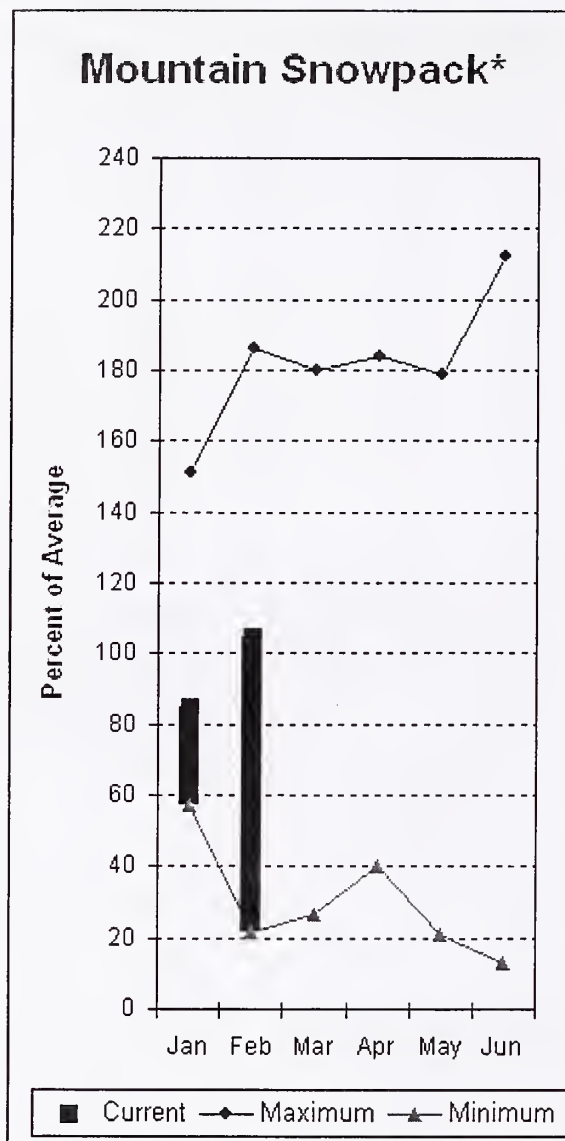
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
COLVILLE RIVER	0	150	0
PEND OREILLE RIVER	10	136	106
KETTLE RIVER	6	88	87

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.

## Okanogan - Methow River Basins



\*Based on selected stations

Summer runoff average forecast for the Okanogan River is 83%, Similkameen River is 86% and Methow River is 94%. Salmon Creek should be expected to have near normal flows this summer. February 1 snow cover on the Okanogan was 91% of average, Omak Creek was 120% and the Methow was 100%. January precipitation in the Okanogan-Methow was 112% of average, with precipitation for the water year at 113% of average. January streamflow for the Methow River was 91% of average, 94% for the Okanogan River and 82% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 7.8 inches. Average for this site is 7.5 inches on February 1. Combined storage in the Conconully Reservoirs was 15,000-acre feet, which is 64% of capacity and 90% of the February 1 average. Temperatures were 8 degrees below normal for January and 3 degrees below for the water year.

*For more information contact your local Natural Resources Conservation Service office.*

# Okanogan - Methow River Basins

## Streamflow Forecasts - February 1, 2008

		<<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
Similkameen R nr Nighthawk (1)	APR-JUL	790	1040	1160	86	1280	1530	1350
	APR-SEP	875	1130	1250	86	1370	1620	1450
Okanogan R nr Tonasket (1)	APR-JUL	745	1130	1300	82	1470	1850	1580
	APR-SEP	855	1270	1460	83	1650	2060	1770
Okanogan R at Malott (1)	APR-JUL	755	1160	1340	82	1520	1930	1635
	APR-SEP	870	1310	1510	83	1710	2150	1826
Methow R nr Pateros	APR-SEP	755	860	930	94	1000	1100	985
	APR-JUL	700	795	860	95	925	1020	910

OKANOGAN - METHOW RIVER BASINS Reservoir Storage (1000 AF) - End of January					OKANOGAN - METHOW RIVER BASINS Watershed Snowpack Analysis - February 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of	This Year as % of	
		This Year	Last Year	Avg		Data Sites	Last Yr	Average
SALMON LAKE	10.5	7.8	9.4	8.4	OKANOGAN RIVER	18	73	91
CONCONULLY RESERVOIR	13.0	7.2	7.1	8.2	OMAK CREEK	3	98	120
					SANPOIL RIVER	1	139	125
					SIMILKAMEEN RIVER	4	61	78
					TOATS COULEE CREEK	1	82	108
					CONCONULLY LAKE	3	82	113
					METHOW RIVER	8	79	100

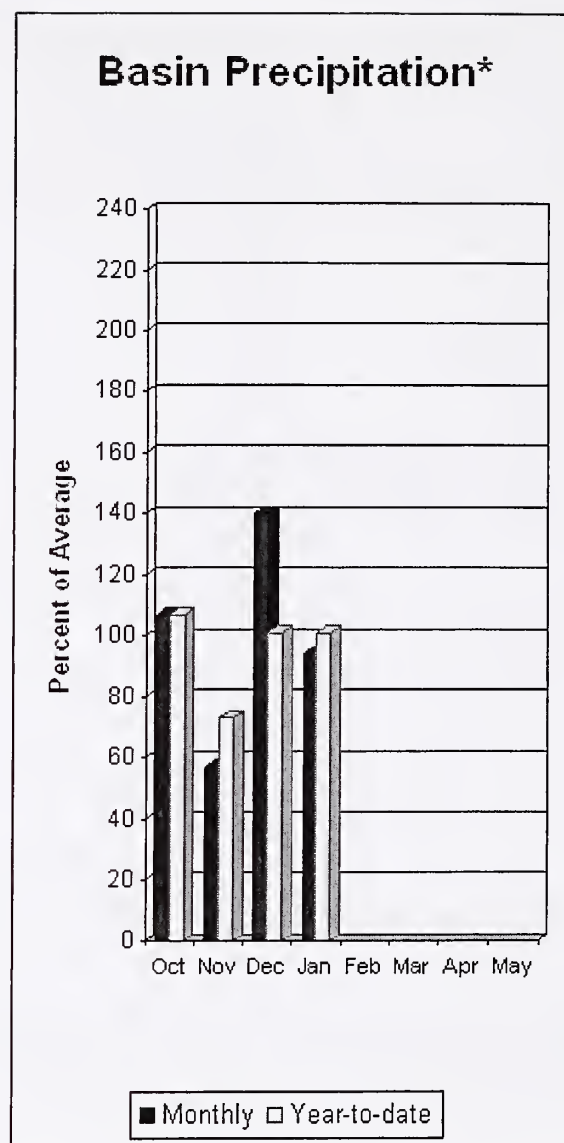
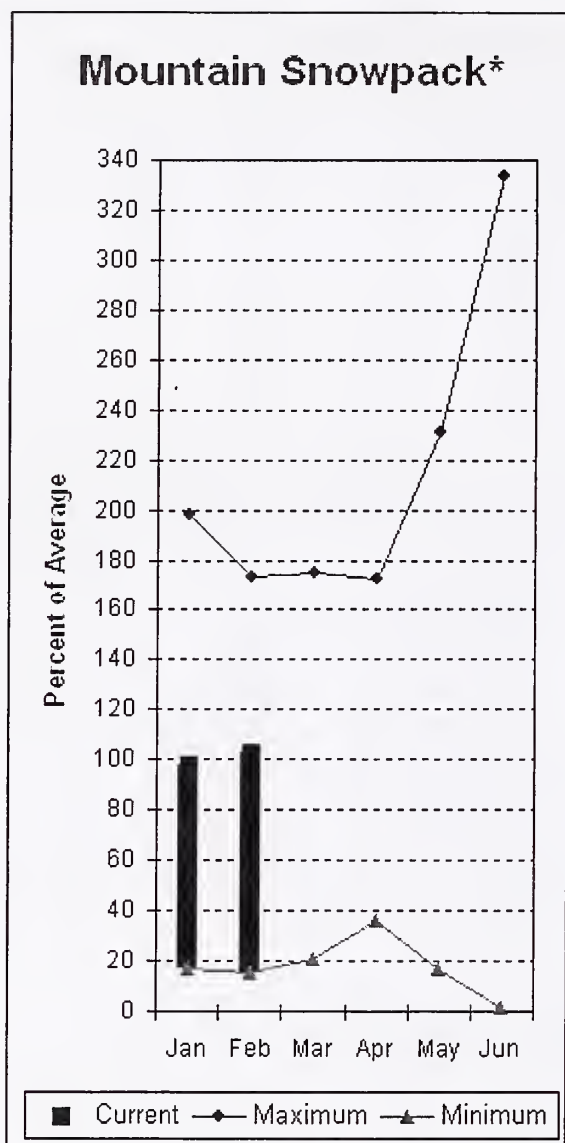
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.



## Wenatchee - Chelan River Basins



\*Based on selected stations

Precipitation during January was 94% of average in the basin and 101% for the year-to-date. Runoff for Entiat River is forecast to be 96% of average for the summer. The February-September average forecast for Chelan River is 98%, Wenatchee River at Plain is 109%, Stehekin River is 99% and Icicle Creek is 103%. Stemilt and Squilchuck creeks should have near average flows as well. January average streamflows on the Chelan River were 70% and on the Wenatchee River 51%. February 1 snowpack in the Wenatchee River Basin was 102% of average; the Chelan, 93%; the Entiat, 108%; Stemilt Creek, 107% and Colockum Creek, 106%. Reservoir storage in Lake Chelan was 247,000-acre feet, 78% of February 1 average and 36% of capacity. Lyman Lake SNOTEL had the most snow water with 35.1 inches of water. This site would normally have 43.4 inches on February 1. Temperatures were 6 degrees below normal for January and 2 degrees below for the water year.

*For more information contact your local Natural Resources Conservation Service office.*

# Wenatchee - Chelan River Basins

## Streamflow Forecasts - February 1, 2008

		<<===== Drier ===== Future Conditions ===== Wetter =====>							
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)	
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)		
Stehekin R at Stehekin	APR-JUL	590	655	700	100	745	810	700	
	APR-SEP	705	775	820	99	865	935	830	
Chelan R at Chelan (2)	APR-JUL	930	995	1040	99	1090	1150	1050	
	APR-SEP	1030	1110	1170	98	1230	1310	1190	
Entiat R nr Ardenvoir	APR-JUL	180	198	210	98	220	240	215	
	APR-SEP	197	215	230	96	245	265	240	
Wenatchee R at Plain	APR-JUL	1050	1120	1170	109	1220	1290	1070	
	APR-SEP	1140	1230	1290	109	1350	1440	1180	
Icicle Ck nr Leavenworth	APR-JUL	290	305	320	103	335	350	310	
	APR-SEP	310	335	350	103	365	390	340	
Wenatchee R at Peshastin	APR-JUL	1420	1530	1600	108	1670	1780	1480	
	APR-SEP	1540	1670	1760	108	1850	1980	1630	
Columbia R bl Rock Island Dam (2)	APR-JUL	47500	54300	59000	100	63700	70500	59000	
	APR-SEP	54800	63400	69200	100	75000	83500	69500	

### WENATCHEE - CHELAN RIVER BASINS Reservoir Storage (1000 AF) - End of January

### WENATCHEE - CHELAN RIVER BASINS Watershed Snowpack Analysis - February 1, 2008

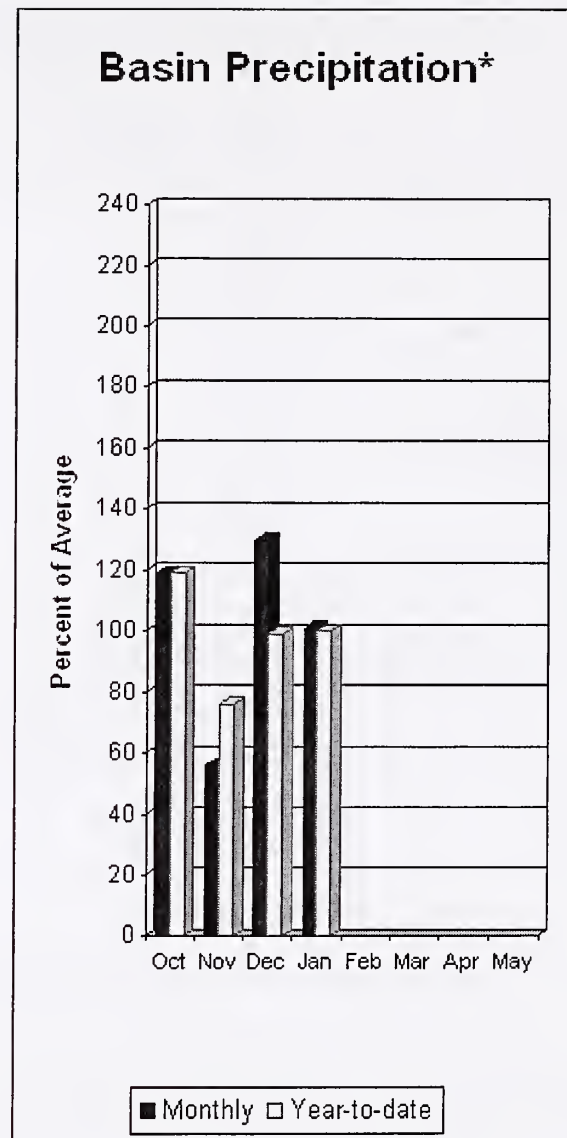
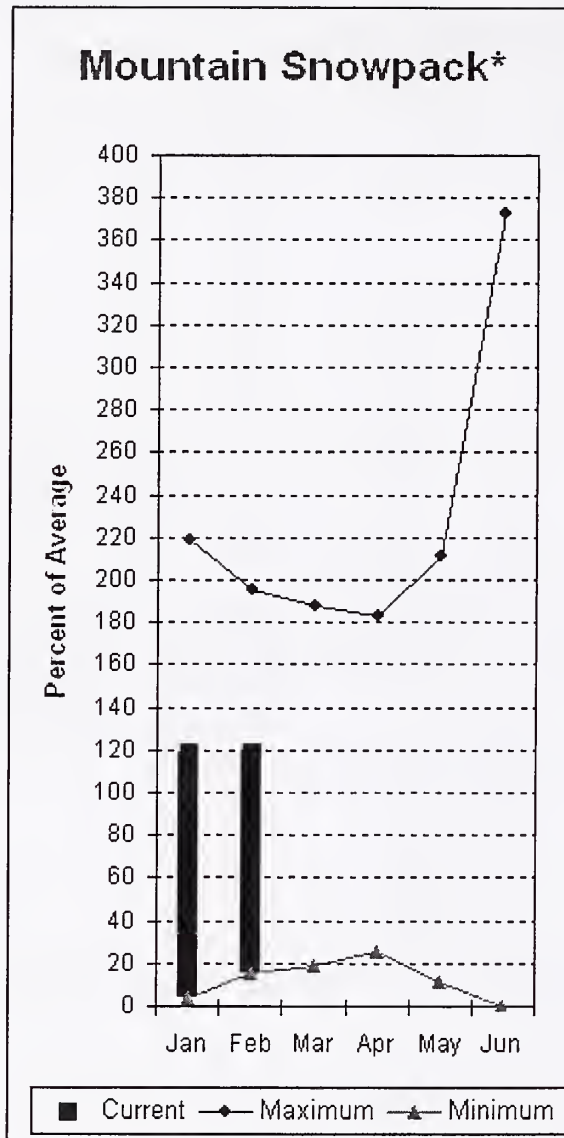
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	246.7	408.5	315.5	CHELAN LAKE BASIN	5	81	93
					ENTIAT RIVER	1	95	108
					WENATCHEE RIVER	7	90	102
					STEMILT CREEK	1	94	107
					COLOCKUM CREEK	2	94	106

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.

# Upper Yakima River Basin



\*Based on selected stations

February 1 reservoir storage for the Upper Yakima reservoirs was 333,000-acre feet, 75% of average. Forecasts for the Yakima River at Cle Elum are 112% of average and the Teanaway River near Cle Elum is at 120%. Lake inflows are all forecasted to be above this summer. January streamflows within the basin were Yakima near Cle Elum at 35% and Cle Elum River near Roslyn at 39%. February 1 snowpack was 119% based upon 10 snow course and SNOTEL readings within the Upper Yakima Basin. Precipitation was 101% of average for January and 100% year-to-date for water. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.



# Upper Yakima River Basin

## Streamflow Forecasts - February 1, 2008

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Keechelus Reservoir Inflow (2)	APR-JUL	105	125	138	112	151	171	123
	APR-SEP	117	137	150	112	163	183	134
Kachess Reservoir Inflow (2)	APR-JUL	99	116	127	113	138	155	112
	APR-SEP	107	124	135	113	146	163	119
Cle Elum Lake Inflow (2)	APR-JUL	375	420	450	110	480	525	410
	APR-SEP	415	460	495	110	530	575	450
Yakima R at Cle Elum (2)	APR-JUL	720	830	905	112	980	1090	810
	APR-SEP	805	920	1000	112	1080	1200	890
Teanaway R bl Forks nr Cle Elum	APR-JUL	122	145	161	120	177	200	134
	APR-SEP	127	150	166	120	182	205	138

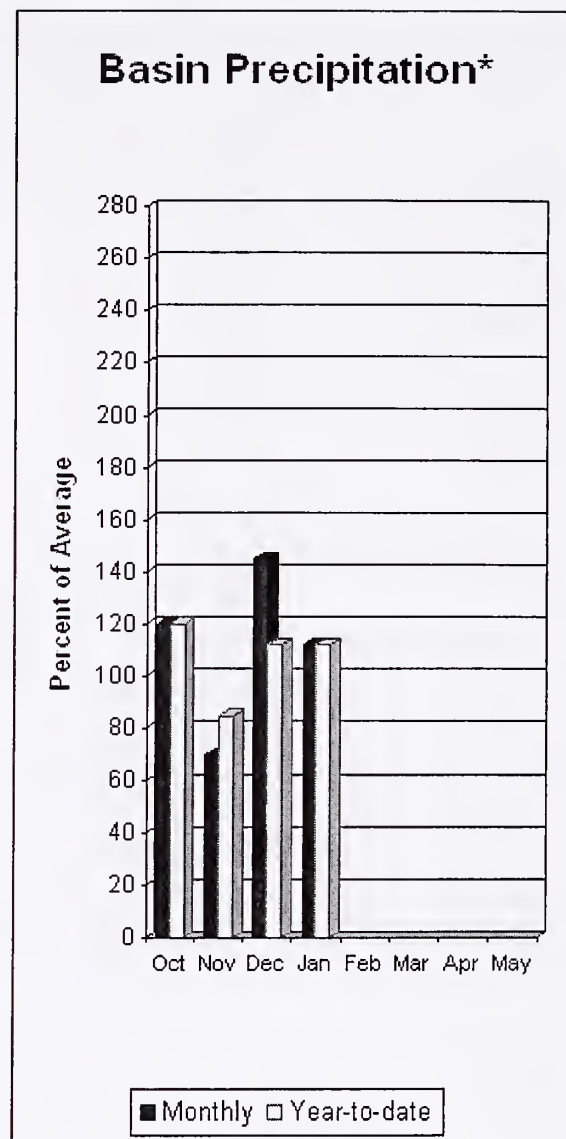
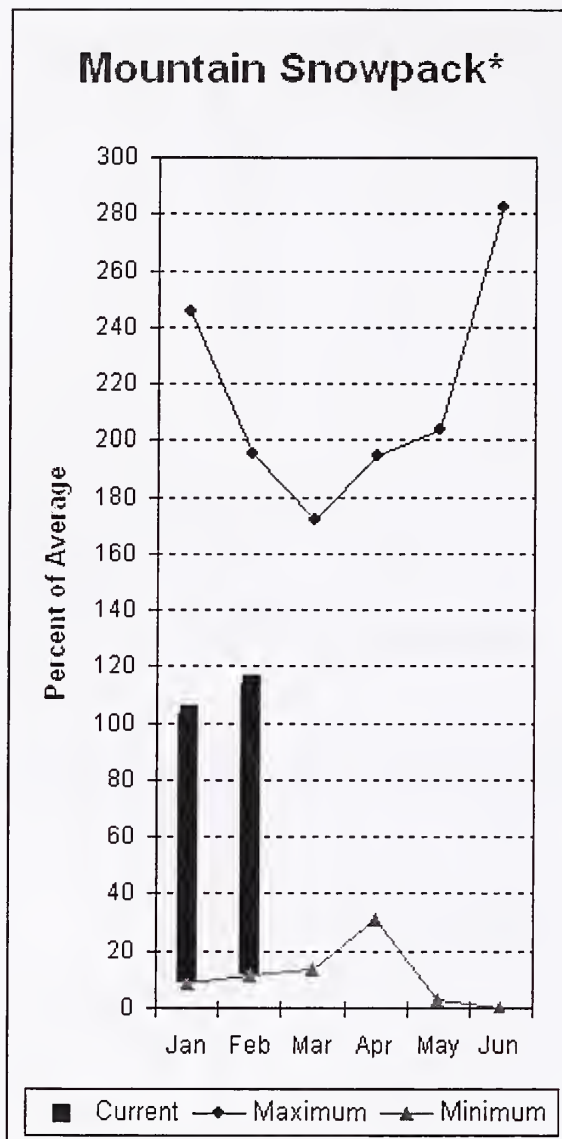
UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of January					UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - February 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	61.3	83.3	89.9	UPPER YAKIMA RIVER	10	97	119
KACHESS	239.0	139.6	147.0	139.4				
CLE ELUM	436.9	131.8	244.3	215.4				

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.

## Lower Yakima River Basin



\*Based on selected stations

January average streamflows within the basin were: Yakima River near Parker, 39%; Naches River near Naches, 47%; and Yakima River at Kiona, 45%. February 1 reservoir storage for Bumping and Rimrock reservoirs was 118,000-acre feet, 97% of average. Forecast averages for Yakima River near Parker are 105%; American River near Nile, 110%; Ahtanum Creek, 106%; and Klickitat River near Glenwood, 119%. February 1 snowpack was 114% based upon 8 snow course and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 108% of average. Precipitation was 112% of average for January and 112% year-to-date for water. Temperatures were 3 degrees below normal for January and 1 degree below for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

*For more information contact your local Natural Resources Conservation Service office.*

# Lower Yakima River Basin

## Streamflow Forecasts - February 1, 2008

		<<===== Drier ===== Future Conditions ===== Wetter =====>>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
Bumping Lake Inflow (2)	APR-JUL	107	121	130	106	139	153	123
	APR-SEP	117	132	142	106	152	167	134
American R nr Nile	APR-JUL	99	111	119	110	127	139	108
	APR-SEP	107	121	130	110	139	153	118
Rimrock Lake Inflow (2)	APR-JUL	180	195	205	103	215	230	200
	APR-SEP	215	230	245	102	260	275	240
Naches R nr Naches (2)	APR-JUL	680	755	810	113	865	940	720
	APR-SEP	730	820	880	113	940	1030	780
Ahtanum Ck at Union Gap	APR-JUL	22	28	32	107	36	42	30
	APR-SEP	24	30	34	106	38	44	32
Yakima R nr Parker (2)	APR-JUL	1570	1760	1890	105	2020	2210	1800
	APR-SEP	1730	1940	2080	105	2220	2430	1990
KLICKITAT near Glenwood	APR-JUL	126	140	150	119	160	174	126
	APR-SEP	167	183	194	119	205	220	163

LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of January					LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - February 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BUMPING LAKE	33.7	12.2	15.9	9.9				
RIMROCK	198.0	105.5	145.1	111.8				

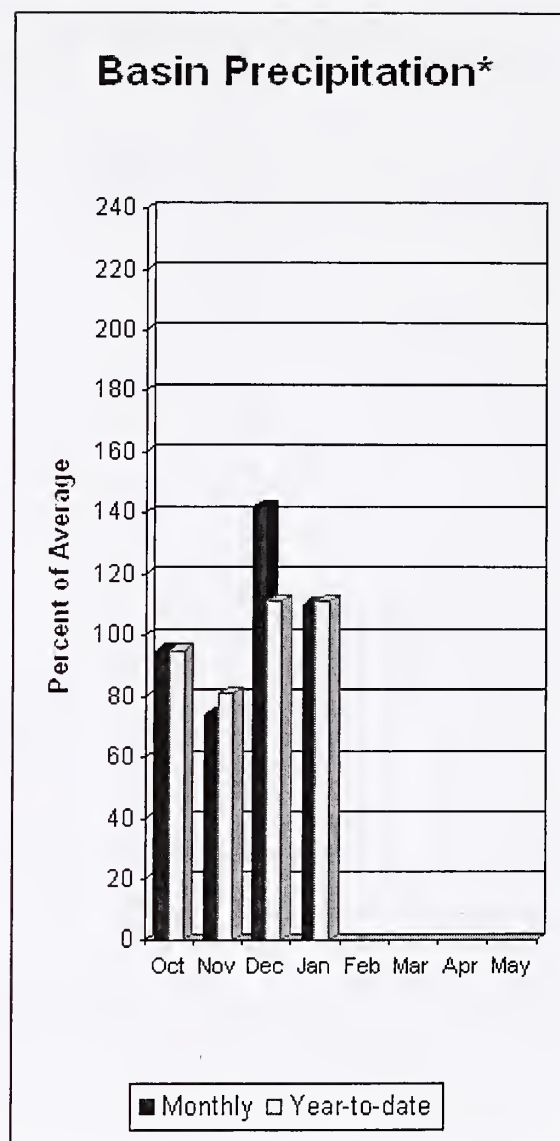
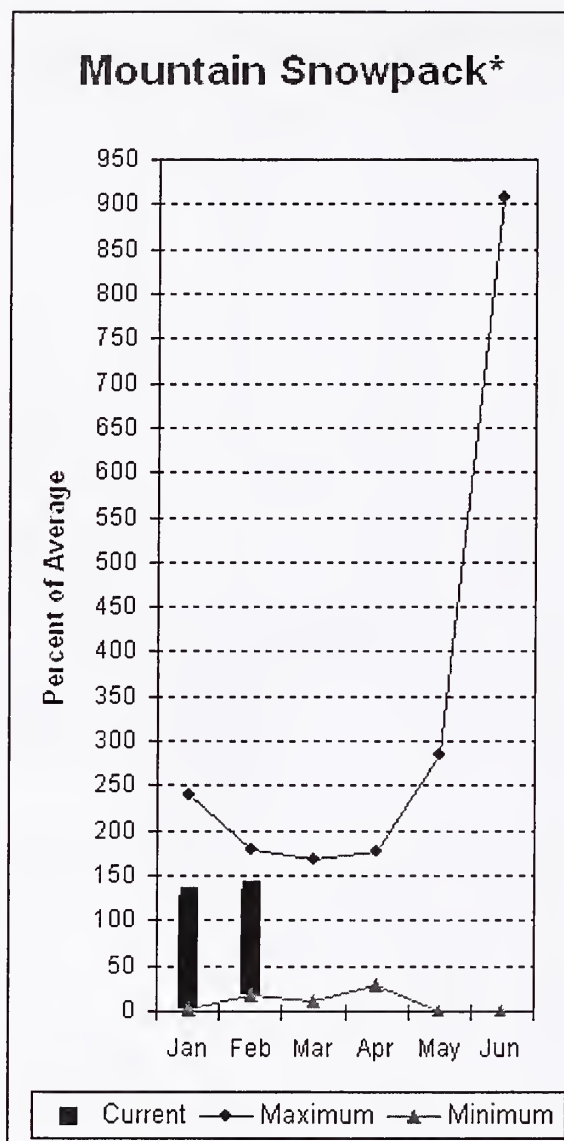
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level. The value listed under 70% is actually a 75% exceedance level.



## Walla Walla River Basin



\*Based on selected stations

January precipitation was 110% of average, maintaining the year-to-date precipitation at 111% of average. Snowpack in the basin was 134% of average. Streamflow forecasts are 114% of average for Mill Creek and 112% for the SF Walla Walla near Milton-Freewater. January streamflow was 64% of average for the Walla Walla River. Average temperatures were 2 degrees below normal for January and near average for the water year. A new SNOTEL site named Milkshakes was installed, in cooperation with the City of Walla Walla, in the headwaters of Mill Creek. We look forward to having this station provide important climatic information in support of the City's water supply forecasting efforts.

For more information contact your local Natural Resources Conservation Service office.

# Walla Walla River Basin

## Streamflow Forecasts - February 1, 2008

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>					
		Chance Of Exceeding *		Chance Of Exceeding *		Chance Of Exceeding *	
		90% (1000AF)	70% (1000AF)	50% (1000AF)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF Walla Walla R nr Milton-Freewater	MAR-SEP	77	85	91	112	97	105
	APR-SEP	63	70	75	112	80	87
Mill Ck nr Walla Walla	APR-JUL	21	24	27	113	30	33
	APR-SEP	25	29	32	114	35	39

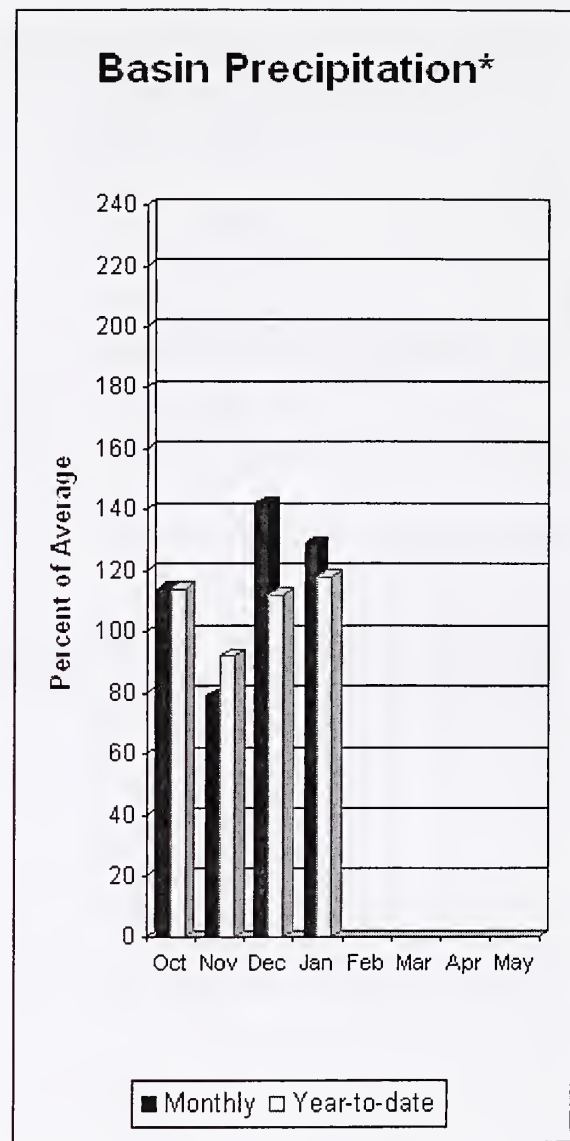
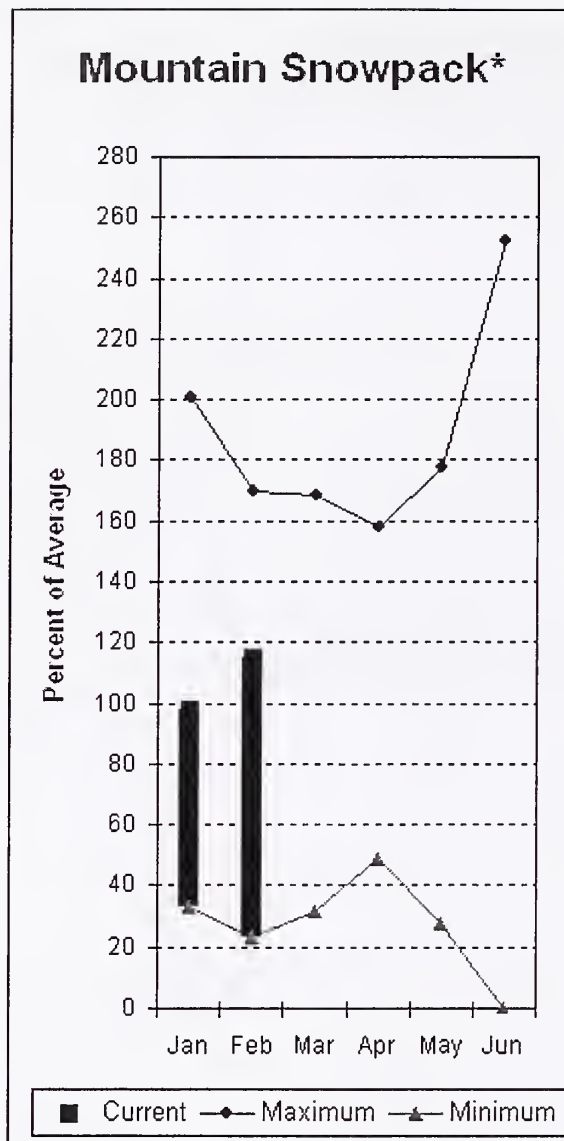
WALLA WALLA RIVER BASIN				WALLA WALLA RIVER BASIN			
Reservoir Storage (1000 AF) - End of January				Watershed Snowpack Analysis - February 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of Last Yr Average
		This Year	Last Year	Avg			
					WALLA WALLA RIVER	2	146

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.

## Lower Snake River Basin



\*Based on selected stations

The April - September forecast is for 107% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 103% and 113% of normal respectively. January precipitation was 129% of average, bringing the year-to-date precipitation to 118% of average. February 1 snowpack readings averaged 115% of normal. January streamflow was 53% of average for Snake River below Lower Granite Dam and 46% for Grande Ronde River near Troy. Average temperatures were 2 degrees below normal for January and near average for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Lower Snake River Basin

## Streamflow Forecasts - February 1, 2008

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions =====		===== Wetter =====>>		30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Grande Ronde R at Troy	MAR-JUL	1230	1620	1800	114	1980	2370	1580
	APR-SEP	1040	1390	1550	113	1710	2060	1370
Clearwater R at Spalding	APR-JUL	6060	7370	7970	107	8570	9880	7430
	APR-SEP	6380	7760	8390	107	9020	10400	7850
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	12900	19300	22200	103	25100	31500	21600
	APR-SEP	14200	21400	24700	103	28000	35200	24100

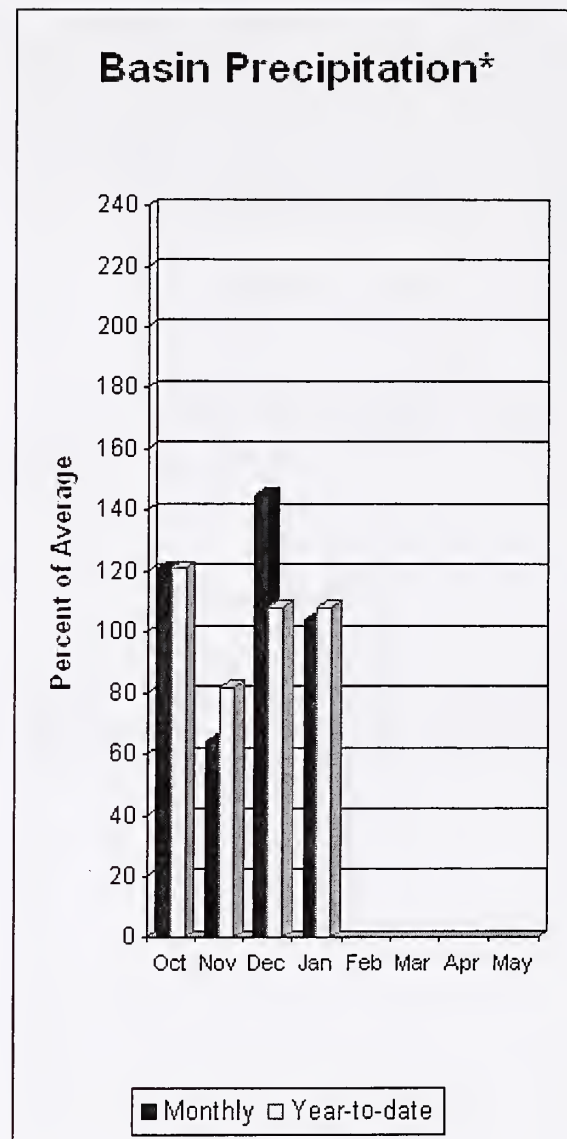
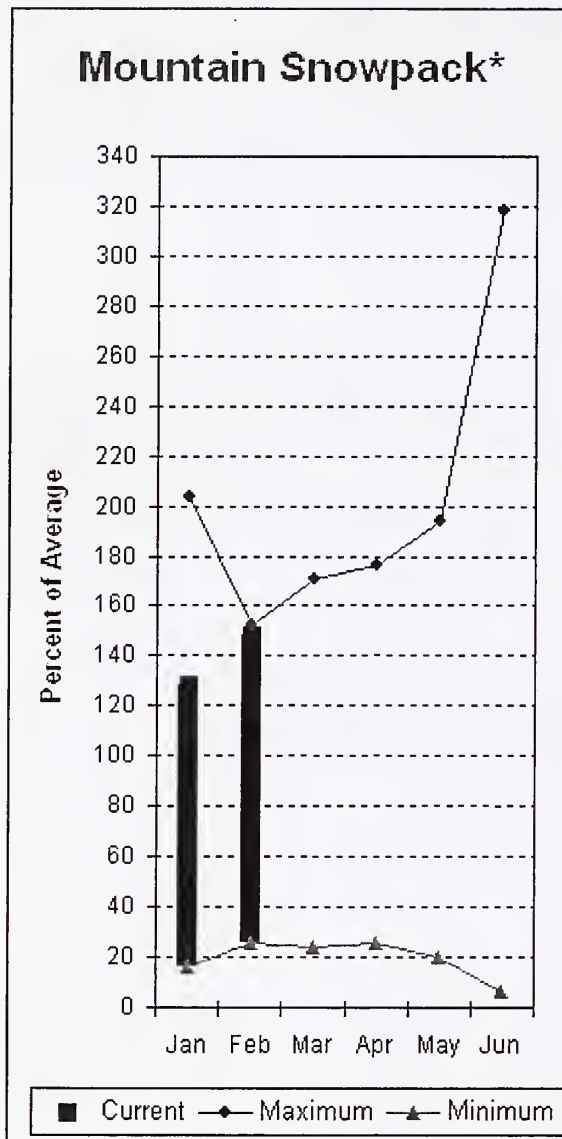
LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of January					LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - February 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					LOWER SNAKE, GRANDE RONDE	11	153	115

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.

## Cowlitz - Lewis River Basins



\*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 117% and Cowlitz River at Castle Rock, 111% of average. The Columbia at The Dalles is forecasted to have 99% of average flows this summer. January average streamflow for Cowlitz River was 69% and 61% for Lewis River. The Columbia River at The Dalles was 64% of average. January precipitation was 104% of average and the water-year average was 108%. February 1 snow cover for Cowlitz River was 140%, and Lewis River was 157% of average. Average temperatures have been 2 degrees below normal during January and 1-2 degrees colder than normal for the water year. A new SNOTEL site named Pepper Creek was installed, in cooperation with PacifiCorp, in the Lewis River Basin. We look forward to utilizing this data to help enhance forecasting efforts in the basin.

For more information contact your local Natural Resources Conservation Service office.

# Cowlitz - Lewis River Basins

## Streamflow Forecasts - February 1, 2008

		<<----- Drier ----- Future Conditions ----- Wetter ----->>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Columbia R at The Dalles (2)	APR-JUL	64800	76100	83800	99	91500	103000	84600
	APR-SEP	74700	88100	97300	99	106000	120000	98600
Klickitat near Glenwood	APR-JUL	126	140	150	119	160	174	126
	APR-SEP	167	183	194	119	205	220	163
Lewis at Ariel (2)	APR-JUL	970	1110	1210	117	1310	1450	1031
	APR-SEP	1130	1280	1380	117	1480	1630	1176
Cowlitz R. bl Mayfield Dam (2)	APR-JUL	1550	1780	1930	114	2080	2310	1689
	APR-SEP	1730	2010	2200	115	2390	2670	1922
Cowlitz R. at Castle Rock (2)	APR-JUL	2130	2380	2550	111	2720	2970	2295
	APR-SEP	2440	2730	2920	111	3110	3400	2639

COWLITZ - LEWIS RIVER BASINS Reservoir Storage (1000 AF) - End of January					COWLITZ - LEWIS RIVER BASINS Watershed Snowpack Analysis - February 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MOSSYROCK	0.0	1117.5	1199.7	---	LEWIS RIVER	5	139	157
SWIFT	0.0	486.0	597.8	---	COWLITZ RIVER	6	124	140
YALE	0.0	363.0	356.1	---				
MERWIN	0.0	408.9	404.0	---				

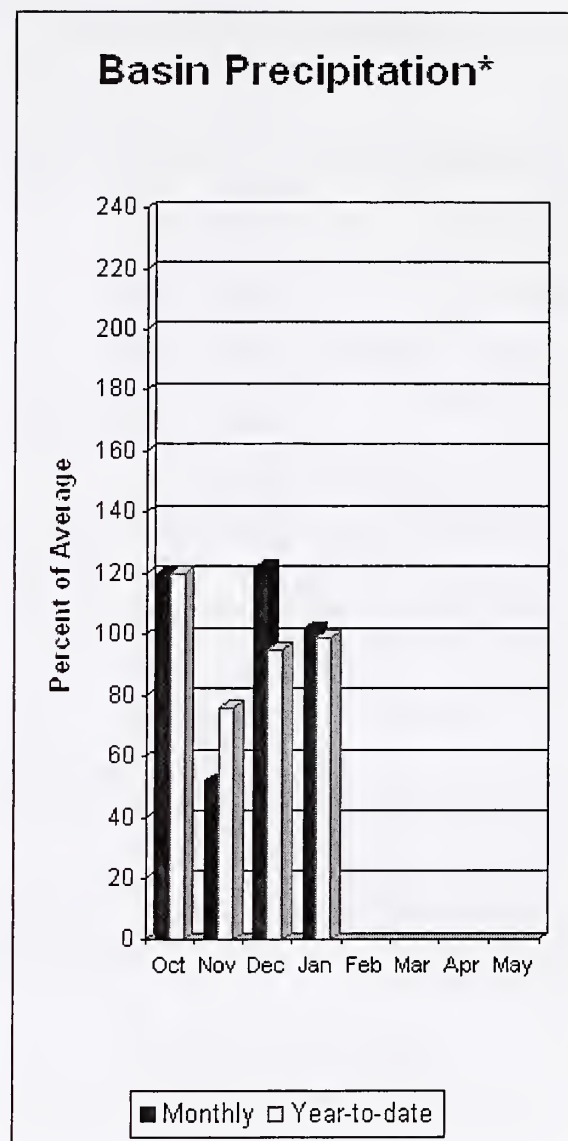
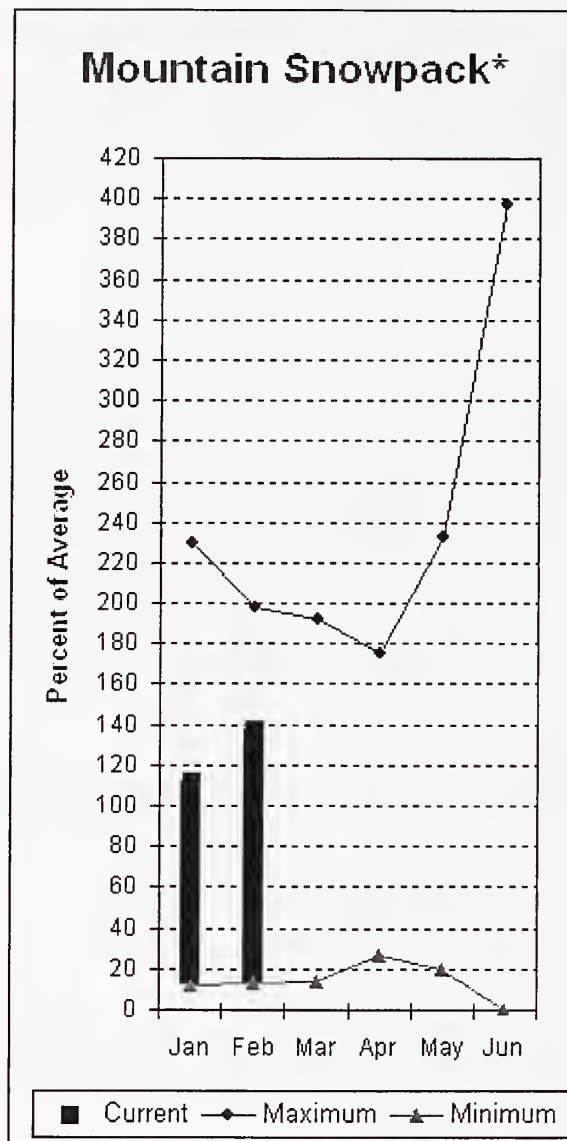
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The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.



## White - Green River Basins



\*Based on selected stations

Summer runoff is forecast to be 119% of normal for the Green River below Howard Hanson Dam and 119% for the White River near Buckley. February 1 snowpack was 127% of average for the White River, 139 % for Puyallup River and 147% in the Green River Basin. Water content on February 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 22.7 inches. This site has a February 1 average of 22.1 inches. January precipitation was 102% of average, bringing the water year-to-date to 99% of average for the basins. Average temperatures in the area were 3 degrees below normal for January and 1 degree below for the water-year. A new SNOTEL site named Lynn Lake was installed, in cooperation with the City of Tacoma, in the Green River Basin. We look forward to having this site, co-located with the historic manual snow course, to enhance water supply forecasting efforts.

*For more information contact your local Natural Resources Conservation Service office.*

# White - Green - Puyallup River Basins

## Streamflow Forecasts - February 1, 2008

Forecast Point	Forecast Period	<<===== Drier =====>>		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	Chance Of Exceeding * (% AVG.)	30% (1000AF)	10% (1000AF)	
WHITE near Buckley (1,2)	APR-JUL	425	495	525	119	555	625	440
	APR-SEP	520	600	635	119	670	750	534
GREEN R below Howard Hansen (1,2)	APR-JUL	190	260	290	119	320	390	243
	APR-SEP	215	285	320	119	355	425	268

### WHITE - GREEN - PUYALLUP RIVER BASINS Reservoir Storage (1000 AF) - End of January

### WHITE - GREEN - PUYALLUP RIVER BASINS Watershed Snowpack Analysis - February 1, 2008

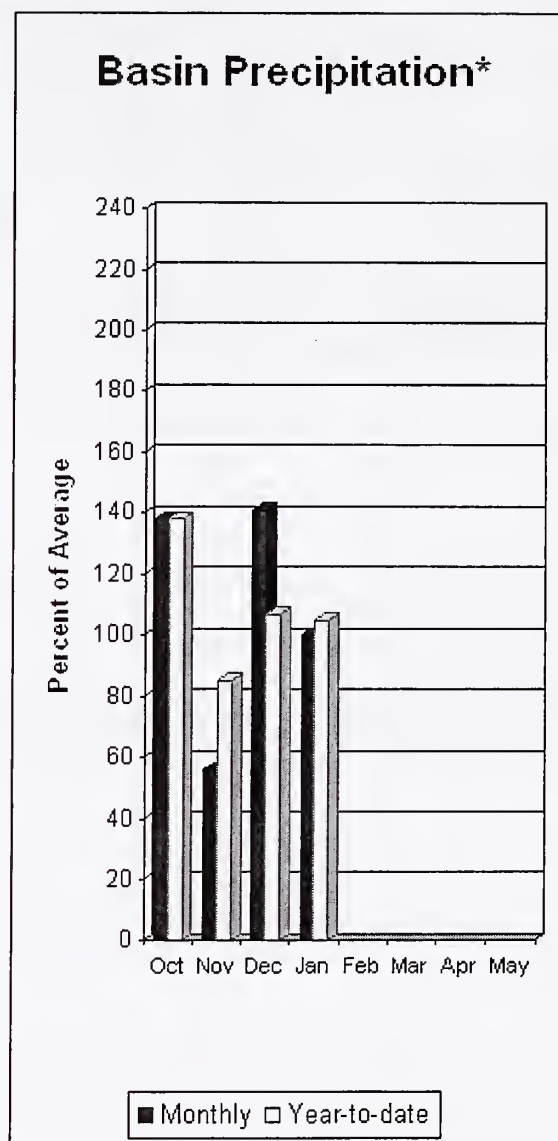
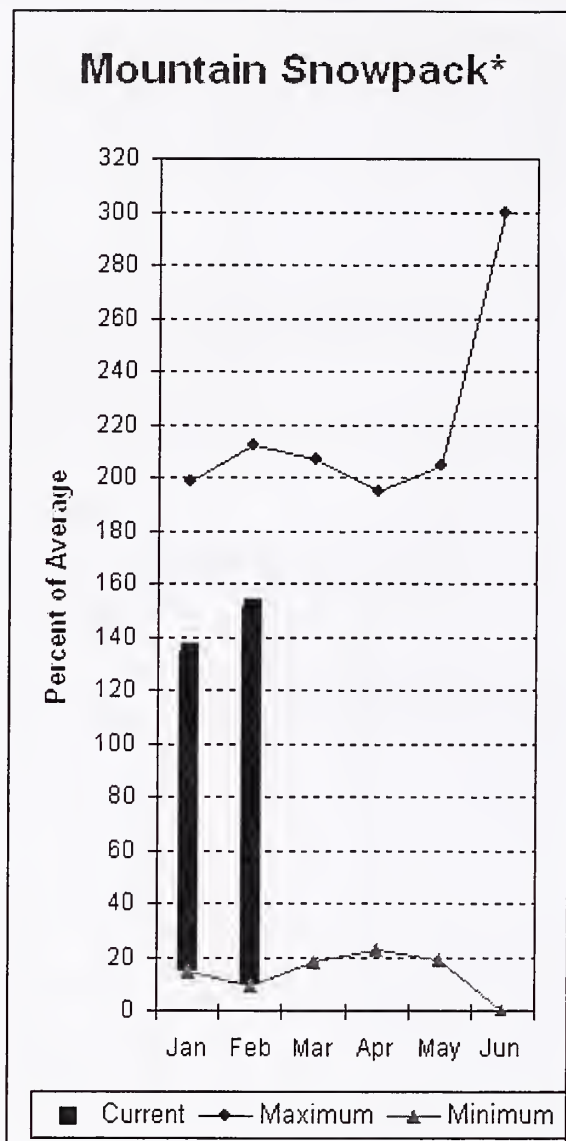
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	109	127
					GREEN RIVER	7	120	147
					PUYALLUP RIVER	5	122	139

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.

## Central Puget Sound River Basins



\*Based on selected stations

Forecast for spring and summer flows are: 126% for Cedar River near Cedar Falls; 129% for Rex River; 111% for South Fork of the Tolt River; and 127% for Cedar River at Cedar Falls. Basin-wide precipitation for January was 100% of average, bringing water-year-to-date to 105% of average. February 1 average snow cover in Cedar River Basin was 168%, Tolt River Basin was 169%, Snoqualmie River Basin was 137%, and Skykomish River Basin was 131%. Rex River SNOTEL site, at 3960 feet, had 39.7 inches of water content. Average February 1 water content is 21.7 inches at Rex River. Rex, Meadows Cabin, Mt. Gardner, Alpine Meadows and Skookum SNOTEL sites all set new record high water content levels for February 1. Temperatures were 3 degrees below average for January and 1 degree below normal for the water-year.

For more information contact your local Natural Resources Conservation Service office.



# Central Puget Sound River Basins

## Streamflow Forecasts - February 1, 2008

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
CEDAR near Cedar Falls	APR-JUL	74	85	92	126	99	110	73
	APR-SEP	82	93	101	126	109	120	80
REX near Cedar Falls	APR-JUL	24	29	32	128	35	40	25
	APR-SEP	28	33	36	129	39	44	28
CEDAR RIVER at Cedar Falls	APR-JUL	64	81	93	126	105	122	74
	APR-SEP	65	82	93	127	104	121	73
SOUTH FORK TOLT near Index	APR-JUL	11.6	14.4	16.3	111	18.2	21	14.7
	APR-SEP	13.9	16.8	18.8	111	21	24	16.9

### CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January

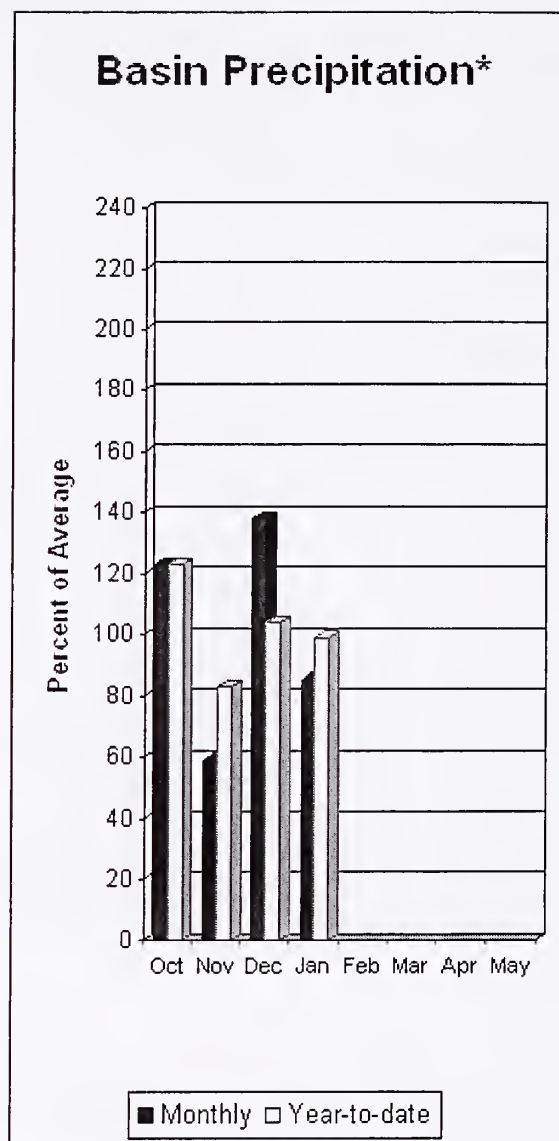
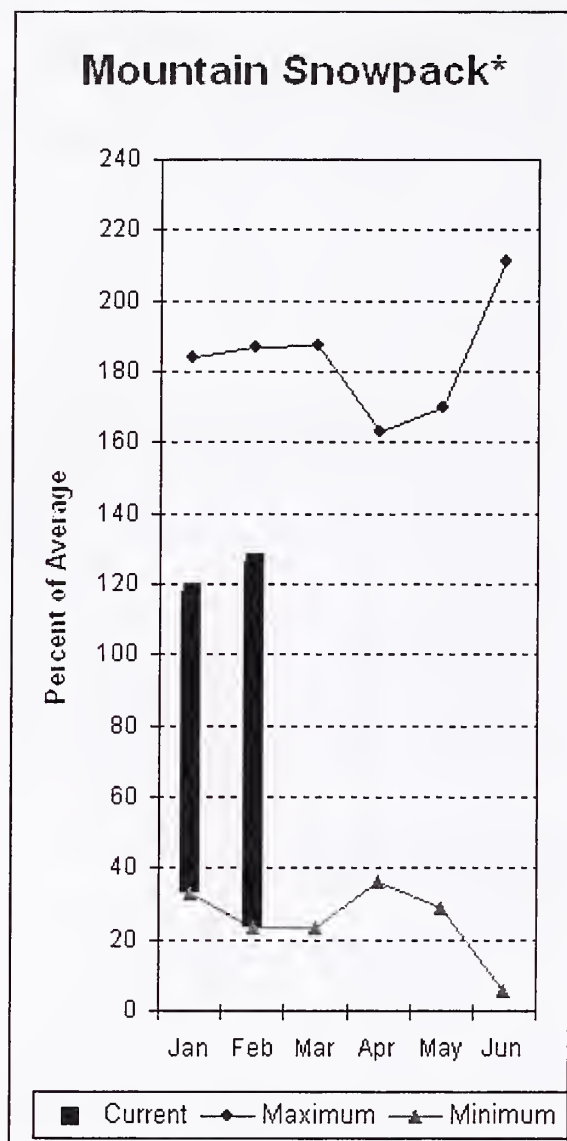
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	4	115	168
					TOLT RIVER	2	128	169
					SNOQUALMIE RIVER	4	113	137
					SKYKOMISH RIVER	2	111	131

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.

## North Puget Sound River Basins



\*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 106% of average for the spring and summer period. January streamflow in Skagit River was 64% of average. Other forecast points included Baker River at 109% and Thunder Creek at 110% of average. Basin-wide precipitation for January was 85% of average, bringing water-year-to-date to 99% of average. February 1 average snow cover in Skagit River Basin was 110%, and Nooksack River Basin was 143% and the Baker River was 126%. Rainy Pass SNOTEL, at 4,780 feet, had 24.8 inches of water content. Average February 1 water content is 30.2 inches at Rainy Pass. February 1 Skagit River reservoir storage was 95% of average and 68% of capacity. Average temperatures for January were 2 degrees below normal for the basin and 1 degree below average for the water year.

For more information contact your local Natural Resources Conservation Service office.

# North Puget Sound River Basins

## Streamflow Forecasts - February 1, 2008

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)					
		90% (1000AF)		70% (1000AF)		50% (1000AF)			30% (1000AF)		10% (1000AF)		
		Chance Of Exceeding *		Chance Of Exceeding *		Chance Of Exceeding *			Chance Of Exceeding *		Chance Of Exceeding *		
THUNDER CREEK near Newhalem	APR-JUL	210	230	255	109	260	280	234					
	APR-SEP	325	350	365	110	380	405	333					
SKAGIT at Newhalem (2)	APR-JUL	1740	1880	1980	106	2080	2220	1864					
	APR-SEP	2110	2250	2350	106	2450	2590	2217					
BAKER RIVER near Concrete	APR-JUL	740	835	900	109	965	1060	828					
	APR-SEP	925	1050	1140	109	1230	1360	1050					

### NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January

### NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - February 1, 2008

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROSS	1404.1	923.9	1031.5	978.3	SKAGIT RIVER	14	84	110
DIABLO RESERVOIR	90.6	86.2	86.5	85.5	BAKER RIVER	9	88	126
					NOOKSACK RIVER	2	89	143

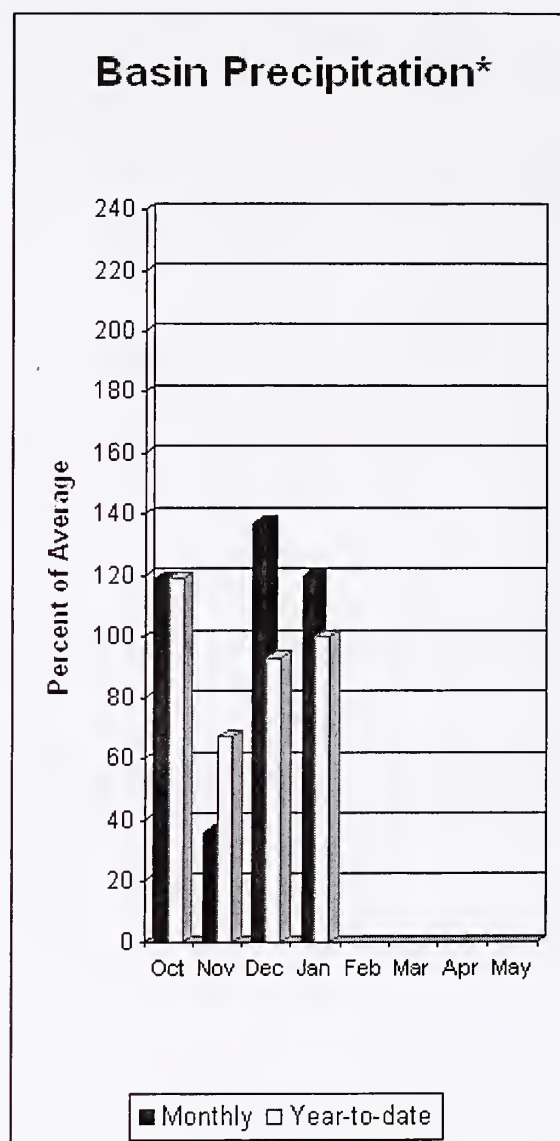
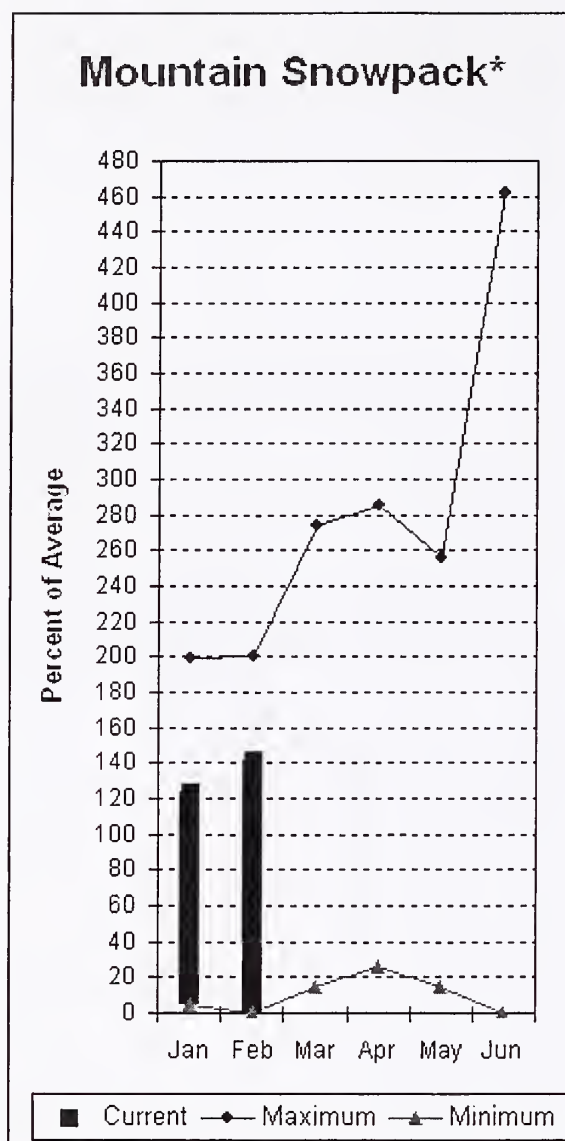
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.



## Olympic Peninsula River Basins



\*Based on selected stations

Forecasted average runoff for streamflow for the Dungeness and Elwha rivers is 115% and 113% respectively. January runoff in the Dungeness River was 58% of normal. Big Quilcene and Wynoochee rivers should expect near average runoff this summer also. January precipitation was 120% of average. Precipitation has accumulated at 100% of average for the water year. January precipitation at Quillayute was 12.02 inches. The thirty-year average for January is 13.65 inches. Olympic Peninsula snowpack averaged 142% of normal on February 1. Temperatures were 3 degrees below average for January and 1 degree below for the water year.

*For more information contact your local Natural Resources Conservation Service office.*

# Olympic Peninsula River Basins

## Streamflow Forecasts - February 1, 2008

		<<===== Drier =====		Future Conditions =====		===== Wetter =====>>		
Forecast Point	Forecast Period	=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
DUNGENESS near Sequim	APR-JUL	116	132	143	115	154	170	124
	APR-SEP	135	158	174	115	190	215	152
=====								
ELWHA near Port Angeles	APR-JUL	420	450	470	112	490	520	419
	APR-SEP	505	545	570	113	595	635	503

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of January					OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - February 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					OLYMPIC PENINSULA	5	86	142

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.
- (3) - Median value used in place of average. The value listed under 30% is actually a 25% exceedance level.  
The value listed under 70% is actually a 75% exceedance level.



*Issued by*

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*Released by*

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## The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work\*:

<b>Canada</b>	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
<b>State</b>	Washington State Department of Ecology Washington State Department of Natural Resources
<b>Federal</b>	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs Recourse Conservation & Development Councils
<b>Local</b>	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County Kalispel Tribe of Indians Spokane Indian Tribe Jamestown S'klallum Tribe
<b>Private</b>	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

\*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.





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# Washington Water Supply Outlook Report

Natural Resources Conservation Service  
Spokane, WA





